

UNIVERSITY OF JOS POST-UTME SCREENING Past Questions & Solutions 2012 – 2005

UNIVERSITY OF JOS ENGLISH LANGUAGE

From the words lettered A - E, choose the word that is alike in meaning to the word underlined.

1. The man is known to be a sly. I won't trust him with anything. This means the man is known as a
(a) deceiver (b) thief (c) kidnapper (d) rogue (e) burglar
2. The woman was happy because her gorgeous dressing made her quite obtrusive. The woman was very
(a) appreciate (b) proud (c) good (d) noticeable (e) excellent
3. Andrew made some bellicose statement about his strength to other boys in the street. This means that Andrew
(a) is a brave man (b) wishes to fight (c) is a coward (d) loves to help others with his power (e) has a lot of power
4. Scrupulous politicians do not have a place in the Nigerian politics. Scrupulous politicians are
(a) honest (b) dishonest (c) corrupt (d) good-nature (e) insincere
5. The excuse that he forgot about the meeting was a flimsy one. This means the excuse was (a) very bad (b) a complete lie (c) difficult to believe (d) not important (e) a very good one

From the alternatives suggested, select the answer that best expresses the same meaning as the expression italicized in each exercise.

6. I wonder if you would allow me to put out the fire. (a) I might (b) I can (c) I should (d) I have to (e) All of them
7. Don't take the plate away; it is possible for the owner to ask for it.
(a) the owner might (b) the owner can (c) the owner is going to (d) the owner will come to (e) none of them
8. I know a carpenter that knows how to make that kind of wardrobe (a) could (b) has the – know-how (c) can (d) can be able (e) may be able to
9. Frances, where is your male visitor? Don't lie to me, it is not possible that he has gone through the high window.
(a) he couldn't have (b) he can't have (c) he shouldn't (d) he mustn't have (e) None of them.
10. When your great-grandmother was in Vietnam, did she have the ability to speak Chinese?
(a) had she been able (b) was she enabled (c) could she (d) how possible was it for her (e) None of them
11. My father made no bones about telling his friend how he felt about his behaviour. This means that my father
(a) spoke well to his friend about his behaviour
(b) spoke honestly to his friend about his behaviour
(c) spoke in the open to his friend about his behaviour
(d) spoke hesitantly to his friend about his behaviour
(e) spoke with all his might to his friend about his behaviour
12. After much talk, my brother thought it was time to hit the hay. This means that my brother thought it was time to
(a) make hay while the sun shines (b) burn the collection of hay (c) go to bed (d) keep quiet (e) tell the others off

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13. The housemaster was foaming in the mouth when he discovered the some students had sneaked out of t6he hostel. This means the house master
(a) was very sad (b) had epilepsy (c) became silent and calculative (d) was uncontrollably furious (e) was jittery
14. Who told Mabel she could sing? She really laid an egg at the talent show. This means
(a) Mabel's performance was very embarrassing
(b) Mabel's performance was very interesting
(c) Mabel's performance was very impressive
(d) Mabel's performance was not very bad
(e) Mabel's performance was like that of a hen laying an egg
15. Mr. Johnson is on the warpath because his car broke down again. This means Mr. Johnson is
(a) ready to fight his mechanic
(b) started fighting the government because the road was bad
(c) very infuriated
(d) fighting a war with his family in the car
(e) drawing a battle in between him and his mechanic

FOR QUESTION 16-20, choose among the options A - E the word that is nearest in meaning to the italicized word in each of the sentences

16. As he watched the winning film his face remained inscrutable.
(a) unreadable (b) pale (c) unfriendly (d) impossible to please (e) enjoyed
17. He resented being criticized every time by his boss.
(a) preferred (b) abhorred (c) ignored (d) carefully considered (e) enjoyed
18. The President announced that all political prisoners have been pardoned.
(a) condemned (b) severely rebuked (c) banished (d) reprieved (e) released
19. The most striking thing about the just-concluded World-Cup Final in Germany was the complete eclipse of the defending champion – Brazil
(a) sudden disappearance (b) defeat (c) failure (d) brilliant performance (e) arrogance
20. His latest album has done much to boast his reputation as a writer
(a) increase (b) establish (c) nourish (d) destroy (e) decrease

For question 21 - 25, choose from the options A - E the word or phrase opposite in meaning to the underlined word.

21. Andrew is too garrulous for my liking
(a) dull (b) apathetic (c) laconic (d) easy going (e) dumb
22. The man holds parochial view on almost every issue.
(a) rational (b) realistic (c) popular (d) broad- minded (e) sensible
23. The doctor certified the tumour malignant (a) benign (b) ripe (c) painless (d) dangerous (e) slow
24. The people appreciated the chairman for his invaluable contributions to the community's development.
(a) worthless (b) costly (c) unrecognized (d) incalculable (e) meaningless
25. Your idea on this issue seems to me quite novel. (a) bookish (b) dangerous (c) archaic (d) genuine (e) good
26. Which of the following statements is true with regard to summary writing?
(a) Details are more important than main ideas
(b) Main ideas are more important than examples
(c) Illustrations are more important than main ideas

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- (d) Elaborations, exemplifications and details are more important than main ideas
- (e) None of the above

Choose the appropriate option to complete the following:

27. God should take control of the heart of the organizers of this Post-UME screening exercise, they should not make this test _____ than UME

- (a) more tough (b) more tougher (c) much tougher (d) more much tougher

28. At the crusade, we prayed to God to _____ this on us.

- (a) breath His breathe (b) breathe His breath (c) breathe His breathe (d) breath His breath

29. The Chairman, Committee of Deans needs to see your friend Dele urgently, do you know his?

- (a) where and about (b) where abouts (c) where about (d) where and abouts

30. "As from now, this university will have zero tolerance for any form of malpractice" said the Vice-Chancellor.

The Vice-Chancellor said that

- (a) as from then, that university would have zero tolerance for any form of malpractice
- (b) as from how, this university would have zero tolerance for any form of malpractice
- (c) as from then, his university will have zero tolerance for any form of malpractice
- (d) as from then, that university would begin to have zero tolerance for any form of malpractice

31. The teacher took me for one of those students who could not spell such words as

- (a) 'miscellaneous and maintenance'
- (b) 'miscellaneous and maintenance'
- (c) 'miscellaneous and maintenance'
- (d) 'miscellaneous and maintenance'

ANSWER KEY

- 1. A 2 D 3 B 4D 5 C 6B 7A 8 C 9 A 10C 11B
- 12 C 13 D 14 A 15 C 16 A 17 B 18 E 19 A 20 B 21C 22D
- 23 A 24A 25 C 26 B 27 A 28 B 29 C 30 B 31 C

UNIVERSITY OF JOS ENGLISH 2007 POST UME TEST

"When he was turned over, his eyeballs stared upward in amazement and horror, His mouth was locked torn wide:

his trousers soaked with blood, were torn open, and exposed to the cold, white air of morning the thick hairs of his groin, matted together, black and rust red, and the wound that seemed to be throbbing still".

- 1. This passage achieves realism through the
- b. simple words
- c. the long sentence
- d. the past tense

Earth has not anything to show more fair Dull would he be of soul who could pass by A sight so touching in its

majesty This city now doth, like garment, wear The beauty of the morning

- 2. It is suggested in these lines that
- a. The beauty of the morning gains from the beauty of the city
- b. The beauty of the city gains from the beauty of the morning
- c. The beauty of the city and the beauty of the morning are unrelated.
- d. There is no beauty on earth If I can fasten but one cup upon him with that which he had drunk tonight already.

He'll be as full of quarrel and offences as my young mistress dog..... Shakespeare, Othello

- 3. From the statement above it can be inferred that the speaker is

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- a. Disobedient
- b. Quarrelsome
- c. A drunkard

That that is why we must accept the universal dome, because there is no direction. The bridge is the dome of religion and bridges don't just go from here to the there; a bridge also faces backwards". Wole Soyinka, *The Interpreters*

4. The idiolectal feature of the character's speech is the

a. Repetition of consonant sounds

b. Repetition of initial consonant sounds

c. Duplication of consonant sound clusters

d. Multiplication of diphthongs

5. "As virtuous men pass wildly away, And higher to their souls, to go, Whilst some of their sad friends do say, The

breadth goes now", and some say "No". The tone of this poem is generally

a. Appreciative b. Serious c. Imaginative d. Conversational

6. I am alone

And the murmur of my lips

Carry song and tears homewards

From a plain away from home

"Okogbule Wonodi, *Lament for Shola*"

The poet-persona here expresses a feeling of a. Love b. Anger c. Nostalgia d. Sorrow

7. One rhyme scheme typical of the English sonnet is

Abba abba cde cde

Abba abba cde dce

Abab cdcd efef gg

Abcd babb cde cc

8. Farce thrives on a. Big events b. promotion c. Absurdity d. incident

9. A short witty statement is an a. Epistle b. Eulogy c. Epigram d. Anecdote

10. In a narration, the first person is

a. The author b. A participant c. The publisher d. An observer

11. A literary device that creates a mental picture of a situation is

a. Imagery b. Symbolism c. Flashback d. Epilogue

12. Periphrasis in poetic diction is marked by

a. Circumlocution b. Irony c. Proverb d. Parable

13. A deliberate imitation of a literary style with the intention to ridicule is

a. Lampoon b. Prosody c. Pun d. Parody

14. What happened to Tess at the end of Thomas Hardy's *Tess of the D'urbervilles*

a. She is executed for committing murder

b. She got married to Angel Clare

c. She got married to Alec D'urbervilles

d. She gave birth to a baby boy

15. The wood where Alec raped Tess is known as

a. Chaseborough b. The chase c. Greenhill d. Tranfridge

16. The name of the place where Tess and Angel Clare meet each other the second time

a. trantridge b. Brazil c. Dubeyfield d. Talbothays farm

17. "Taxi Driver" in Timothy Wangusa's "A Taxi driver on his Death" can be interpreted as a metaphor describing:

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- a. a careful driver b. a ruthless dictator c. a drunkard d. a careless man
18. The tone in Dennis Brutus' "A Troubador I Traverse" can be described as:
a. defiant b. submissive c. regretful d. arrogant
19. "Naett" in Leopold Sedar Senghor's "I will Pronounce your Name" refers to:
a. South Africa b. A woman c. A man d. Black Africa
20. Cloud I, early sequestered from my tribe, Free a lead — tethered scribe".
The above lines from J.P. Clark's "Agbor Dancer" suggest that the person is:
a. One with his tribe b. Alienated from his tribe c. One of the dancers d. One of the drummers
21. The name of the author of "We Must Learn to Fly" is:
a. Dennis Brutus b. Leopold Sedar Senghor c. Odia Ofeimun d. Wole Soyinka
22. One of the following is a characteristic of a novel:
a. it is written only in dialogues
b. it adopts the poetic form
c. it is written mainly in prose
d. it employs phrases and sentences
23. The Law protecting works of art from unlawful reproduction is called:
a. plagiarism b. illegal photocopying c. authorization d. copyright
24. The play hamlet may be described as a tragedy of:
a. belief in ghosts
b. marital infidelity
c. indecision and procrastination
d. inordinate love of father by son

ANSWER KEY

1 A 2 B 3D 4 C 5B 6 C
7 C 8D 9C 10A 11A 12A
13D 14 A 15 – 16 - 17D 18A
19 B 20 B 21 C 22 C 23D 24A

UNIVERSITY OF JOS ENGLISH

2008 POST UME TEST

1. An autobiographical novel is:
a. A novel written about another novelist
b. A true account of a novelist's life by himself
c. A novel in which the novelist draws mainly on materials from his own life
d. A novel using the 'I' pronoun
2. Plot in prose fiction is best defined as:
a. The cause and — effect sequence of events
b. The brief summary of events
c. The central event
d. The subject — matter of a novel
3. Which of these is not true about unity of action in a novel?
a. Action may be unified through a single main character
b. Action may be unified by being set in one place
c. Action may be unified by many characters
d. Action may be unified by having one consistent point of view
4. Action in a novel is best defined as:
a. The summary of the novel's story
b. What the characters do or say in the novel
c. The numerous sub — plots of the novel put together
d. The totality of all the episodes in a novel leading to the conclusion

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5. Suspense in a novel means
 - a. the postponement of the hero's death till the last possible moment
 - b. the intense emotions that the author conveys
 - c. the inconclusive end of a novel
 - d. when we are curious about what happens next in a novel
 6. A realistic novel is one in which the characters are:
 - a. real
 - b. historical
 - c. just of above average intelligence
 - d. the types that we meet in everyday life
 7. Theme is best defined as:
 - a. The subject matter of a novel or play
 - b. central idea in a play or novel
 - c. The point of view in that novel
 - d. The sum — total of all the characters experiences
 8. What figure of speech does the following quotation contain?
Life's but a walking shadow (Macbeth)
 - a. A metaphor
 - b. An image
 - c. A synecdoche
 - d. An allusion
 9. Which of the following statement is most true about poetry?
 - a. the meaning of words are more important than their sounds
 - b. the sounds of words are more important than their meanings
 - c. the sound of words are often more important than their meanings
 - d. sounds and meanings of words are of little consequence
 10. Which of these best define exposition in drama?
 - a. the author's own general introduction to the play
 - b. the author's early exposure of his dramatis personae to conflict
 - c. introduction to the characters and the general problem with which the play deals
 - d. the first performance of the play on stage
 11. When the speaker in a poem cannot be identified with the poet, that speaker is called:
 - a. a persona
 - b. a dramatis persona
 - c. a soliloquist
 - d. a ventriloquist
 12. Which of these definitions best describes a lyric?
 - a. A short poem
 - b. a short poem in which the poet himself is speaking
 - c. a poem expressing a personal idea, feeling or mood
 - d. a poem divided into stanzas
- Read the following extract from a poem to answer questions 13 and 14.**
- Among rocks, I am the loose one, among arrows, I am the heart among daughters, I am the recluse, among sons, the one who dies young
13. What kind of repetition is used in the extract?
 - a. anaphora
 - b. single word repetition
 - c. line repetition
 - d. phrase repetition
 14. Apart from emphasis, what other effect does the repetition have?
 - a. makes the poem rhythmical

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- b. makes the poem tedious
 - c. makes the poem monotonous
 - d. 'makes the poem exhilarating
- 15 The following line from poem Western wind, when will thou blow? Is an example of:
a rhetorical question b. caesura
c. alliteration d. nature imagery
16. identify the odd one out of these types of imagery
a. visual imagery b. tactile imagery
c. synaesthesia d. literal imagery
17. When a poet uses mainly soft vowel sounds in a poem, the texture of the poem is:
a. mellifluous b. harsh c. assonantal d. neutral
18. The sounds in the following lines may be described as an example of:
The moan of doves in immemorial elms, And murmuring of innumerable bees
a. Alliteration b. Euphony c. Cacophony d. A mixture of all above
19. The man dies in him who keeps silent in the face of tyranny". This statement can be described as:
a. Metaphoric b. Literal c. Tragic d. a simile
20. The literary technique in which a reader taken to the past of a current action is known as:
a. rewinding b. fast forward c. flashback d. repetition
21. One rhyme scheme typical of the English sonnet is
a. abba abba cde dee
b. abba abba cde cde
c. abab cdcd efef gg
d. abcd babb cde cc
22. Farce thrive on a. big events b. absurdity c. promotion Incidents d. picture of a situation
23. A short witty statement is an a. epistle b. eulogy c. epigram d. anecdote.
24. In a narration, the first person is a. the author b. a participant c. the publisher d. an observer
25. A literary device that creates a mental
a. imagery b. symbolism c. flashback
d. epilogue
26. ".....This is a Montague, our foe:
A villain, that is hither come in spit
To scorn at our solemnity this night, William Shakespeare: Romeo and Juliet I: V, 61 - 63".
The speaker of the above except is a
a. Son of Lord Montague b. Kinsman to the Prince c. Nephew to Lady Capulet d. Servant to Paris
27. In Gbemisola Adeoti's "Naked Soles", the expression "red milk of grief" means
a. wine b. Sea c. Ink d. Blood.

ANSWER KEY

1B 2A 3D 4 B 5 D 6D
7B 8 A 9 A 10 C 11 A 12 C
13 A 14 A 15 C 16 C 17 C 18 B
19 B 20 C 21C 22 D 23C 24 A
25A 26 - 27

UNIVERSITY OF JOS ENGLISH 2009 POST UME TEST

Question 1 — 3 are based on Williams Shakespeare's Romeo and Juliet

1. The multiple death in the play serve as a punishment for
a. Impatience on the part of Romeo and Juliet;
b. Imposing life partners on children
c. Disobedience of the protagonists

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- d. Tybalts's fiery temper
- 2. Romeo's death becomes inevitable because
 - a. Eriar Lawrence's letter is not delivered
 - b. Juliet is married to Paris
 - c. Romeo kills Tybalt in a duel
 - d. Juliet has committed suicide
- 3. Before he met Juliet, Romeo was in love with
 - a. Country Paris
 - b. Rosaline
 - c. Benvolio
 - d. Mercutio

Questions 4 — 5 are based on George Orwell's Nineteen Eighty four

- 4. Winston Smith begins his rebellion against the power of the state by
 - a. Educating the youth
 - b. Keeping a private diary
 - c. Purchasing arms
 - d. Disobeying Big Brother
- 5. In the novel, Orwell attempts to
 - a. Eulogize the beauty of the socialist system
 - b. Condemn the disgusting hypocrisy of all communist systems
 - c. Satirize the artificiality of a machine controlled society
 - d. Deride the political lockjam in Nigeria

Question 6 — 7 are based on selected poems

- 6. The experts, of course Disagree the urine test they ordered Said, Negative
The lines above from Acqah's in the Novel of the soul depict
 - a. Awareness
 - b. Progress
 - d.
- 7. In Kunene's A Heritage of Liberation, freedom is to be achieved through the efforts of
 - a. The new generation
 - b. The old generation
 - c. Present generation
 - d. Successive generations
- 9. This is my letter to the world
That never wrote to me
The simple news nature told
With tender majesty
Her message is committed
To hands I cannot see
For love of her, sweet countrymen
Judge tenderly of me
To whom does 'her' inline 5 refers to
 - a. God
 - b. Letter
 - c. World
 - d. Nature
- 9. Characterization in a novel means the
 - a. List of character featuring in it
 - b. Peculiar mannerisms of the narrator'
 - c. mode of presenting the fictional individuals
 - d. List of those that act the novel
- 10. Caricature is used to
 - a. Censure an individual by emphasizing, his weakness
 - b. Expose the folly in literature
 - c. Ridicule a person by distorting his most prominent features
 - d. Elicit the artistic potential of dramatist
- 11. The branch of knowledge that places emphasis on beauty is Inevitability Contradiction
 - a. Philosophy
 - b. Ode to beauty
 - c. Philology
 - d. Aesthetics

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12. As a literary form the short story is most closely related to

a. The discourse b. The novel c. Story telling d. poetry

13. A poem written on a grand theme, in an appropriately grand style, dealing with heroic figure is called

a. An epigram b. An epic c. A soliloquy d. A heroic poem

14. The literary device which uses ridicule to correct social ills is known as;

a. Anecdote b. Saturation c. Hyperbole d. satire

15. The madman has entered our house with violence

Defiling our sacred grounds

Claiming the single truth of the universe

Bending down our priest with iron

Mazizi Kunene's Progress

The imagery of the lines above captures the idea of

a. Coercion

b. Truth c. Religiosity

d. Persuasion

16. Behold her, single in the field Your solitary highland Lass

Reaping and singing by herself

Step here, or gently pass

Alone she cuts and binds the grain

And sings a melancholy strain

O liss4en! For the vale profound

Is overflowing with the sound

The rhyming scheme in the first stanza of "The solitary Reaper above is"

a. abchddee b. ababccdd c. abcabcdd d. abebddef

17. Carreemed,

These oily tears

Dripping down the tears on your depressed face

Will one day be staunched, I swear

The tone of the poet is a. optimistic b. supplicatory c. symphathetic d. piteous

18. what distinguishes poetry from other forms of literature is its

a. rhyme and verse b. rhythm and metaphor

c. emotion and feeling d. irony and paradox

19. Assonance in poetry is the repetition of

a. internal vowels in words

b. consonant sounds in words

c. final sounds at the end of a line

d. final sounds at the beginning of a line

20. There kneels a jigger, a house weevil, a flea, a bedbug! He is mistletoe, a parasite that

lives on the trees of other people's lives! The speaker uses a sting of

a. metaphors b. parables

c. hyperboles e. riddles

21. As white people do you kiss her on the cheek

As you kiss her open — sore lips As white people do You suck slimy saliva From each other's

mouths As white people

do Okot P'Bitek's song of Lanino The writer of the lines above uses repetition to enhance irony

a. to underscore disapproval b. for emphasis c. for imitation

22. Mother, didn't you hear me? I've brought the goat, hen and yams. Don't you want them any more? Why do you

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continue to look at me like that? I haven't done anything wrong again, have i? answer me, speak to me, mother!

The dominant mood in this passage is one of

- a. Sadness b. Anxiety
- c. Anger d. Nonchalance

23. The literary device which anticipates that an event will take place is best described as

- a. Parody
- b. flashback
- c. foreshadowing
- d. rising action

24. The major reason for Juliet's grief is

- a. the death Of her cousin
- b. her reluctant marriage t Romeo
- c. the banishment of her lover
- d her imminent death

25. Then suddenly her heart was whipped up, she now rode on strange waves: alone defying the wind and the rain,

alone, fighting hunger and thirst in the desert, alone, struggling with strange demons in that forest bringing glad

tidings to her people. The mood of the lady in this passage is one

- a. simple defiance b. defeat c. triumphant d. depression

UNIVERSITY OF JOS USE OF ENGLISH

2010 POST UME TEST

Questions 1 — 4 are based on JC de Graft's Sons and Daughters.

1. The thematic pre — occupation of de Graft's sons and Daughters' can be summarized as

- a. The import of western education
- b. The roles of women in modern economy
- c. How to become a lawyer
- d. Family life in the face of social changes

2. Lawyer Bonn in de Graft's Sons and Daughters' can be described as a

- a. Caring father b. Faithful husband c. Deceitful friend d. Shrewd politician

3. De Graft's sons and Dugthers is structured

4. The central conflict in de Grafts sons and Daughters is primarily

- a. Political b. Generational c. Racial d. communal

Questions 5— 9 are base on Oyono's Old Man and the Medal

5. He already had five wives and was soon going to break the antelope for the sixth time". The expression "break

lungs of the antelope" means to:

- a. Be on honeymoon b. Offer ritual sacrifice c. Hunt for antelopes d. Have a new baby

6. The medal in Oyono's the old man and the Medal is compensation to Meka for the loss of his two sons and his:

- a. House b. Horse c. Land d. job

7. Kelara in Oyono's The Old man and the medal is:

- a. Mvodo's sister b. Commandants maid c. Meka's wife d. Agatha's cousin

8. In Oyono's the Old Man and the Medal, Ignatius Obebe is a

- a. Driver b. Soldier c. Carpenter d. Catechist

9. The medal in Oyono's The Old man and The Medal us a symbol of:

- a. colonial deceit b. African pride c. Genuine reward for loyalty d. Respect and honour

Question 10 — 14 are based on selected African poems

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10 Dancing through blooming thorns in Gbemisola Adeoti's *Naked Soles* connotes

- a. hoeing a field of thorns
- b. dancing in a keen competition
- c. being merry amidst suffering
- d. playing flowers and plants

11 In Gbemisola Adeoti's "Naked Soles", the expression red milk of beef refers to:

- a. wine b. ink c. blood d. Palm oil

12. In Masidi Kunene's "A Heritage of Liberation". This season refers to the period of

- a. oppression b. c. migration d freedom resettlement

13. Eagle in Kunene's A heritage of Liberation is a symbol of

- a. deceit b. peace c. agility d. death

14. The tone in Gbemisola Adeoti's *Naked Soles* is that of

- a. reconciliation b. lamentation c. exhortation d. admiration

Questions 15 — 16 are based on Non — African Poetry

15 The attitude of the poet — persona toward bats in D. H. Lawrence's *Bats* is that of

- a. revulsion b. veneration c. admiration d. indifference

16. In *China* according to D.H. Lawrence, bats are symbols of

- a. death b. birth c. caution d. Joy

17. In Wendy Cope's *Sonnet VII*, poetry is regarded as a God given weapon to:

- a. Musicians b. recluses c. nomads d. pilgrims

18. The greatest challenge to the poet — persona in Andrew Marvell's "To his Coy Mistress" is

- a. Chariot b. Love c. Time d. Youth

Questions 19- 24 are based on literary

Appreciation

19. The tone of the speaker in the excerpt above (Q 20) is that of

- a. agony b. joy c. fulfillment d. admonition.

20. But the pigs were so clever that they could think of a way around every difficulty. As for the horses, they know

every inch of the field and in fact understood the business of mowing and raking'. The dominant literary device in the

excerpt above.

- a. repetition b. mimesis c. ellipsis d. personification

21. The dairy maids and men had flocked down from their cottages and oilds of the dairy — house with the arrival of

the cows from the meads: the maids walking in patterns, nor on account of weather, but to keep their shoes above

the mulch of the bats on". The setting of the above passage can be described as

- a. Urban b. Celestial c. Pastoral d. Religious

22. "O mother, my mother! ..." How could I be expected to know I was a child when I left this house four months ago.

Why didn't you tell me there was danger in men — folk?

Why didn't you want me?" The speech above achieves its literary effect through the use of:

- a. litotes b. Onomatopoeia c. allusion d. repetition

23. The animals saw no reason to disbelieve him' especially as they could no longer remember very clearly what

conditions had been like before the rebellion. All the same, there were days when they felt that they would sooner

have had less figures and more food' The tone of the passage above is quite: a. exhilarating b.

- cynical c. optimistic d.

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obsequious

24. We are tired of waiting for another war

Our trees their leaves have shed

The winter has come and gone

Spring flowers have blossomed and withered

In line 2 of the poem above, the poet uses:

a. Ellipsis b. Alliteration c. Inversion d. Oxymoron

25. I come and go

A pilgrim

Grubbily unkempt

Stubbornly cheerful

Defiantly whistling hope

And grubbing for crumbs of success

Out of all near defeats.

The poet personal in the poem above is:

a. Resigned to fate

b. A holy man

c. A daily traveler

d. Suffering but optimistic

UNIVERSITY OF JOS 2006 POST UME TEST

BIOLOGY

1. An amoeba moving towards a crumb of cake in a pond most likely exhibits

(a) phototropism (b) chemotaxis (c) thigmotaxis (d) nastic movement

2. Which of the following cells would most probably contain the greatest number of Golgi bodies

(a) muscle cell (b) secretor cell (c) nerve cell (d) white blood cell

3. A group of similar cells performing the same function is

(a) an enzyme (b) an organ (c) a tissue (d) an organelle

4. Structures found in cells are listed below:

i) cell wall ii) cell membrane iii) chloroplast iv) cytoplasm v) nucleus vi) sap vacuole

Which of these structures are found in both animal cells and plant cells?

(a) i, ii and v (b) i, iii and v (c) ii, iii and v (d) ii, iv and v

5. Which of the following is not present in the nucleus of a cell?

(a) chromosomes (b) nucleolus (c) mitochondrion (d) genes

6. A plant which grows on another plant without apparent harm to the host plant is

(a) a parasite (b) saprophyte (c) epiphyte (d) a predator

7. The petals of a flower are collectively called

(a) calyx (b) carpel (c) capsule (d) corolla

8. Osmosis can be defined as diffusion of

(a) water molecules from an area of high concentration to an area of low concentration.

(b) water molecules from a dilute solution to a concentrated solution across a permeable membrane

(c) water molecules from a concentrated solution to a dilute solution through a semi-permeable membrane.

(d) water molecules from a dilute solution to a concentrated solution through a semi-permeable membrane.

Chlorophyll H

9. The oxygen given off during the process in the above equation is derived from

(a) sunlight (b) water (c) carbon dioxide (d) atmosphere

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10. When testing a leaf for starch, why is it first placed in boiling water?
- (a) to extract the chlorophyll
 - (b) to remove colour from the leaf
 - (c) to dissolve the starch
 - (d) to stop chemical reactions
11. Each of the following is an arthropod except the
- (a) crab (b) scorpion (c) spider (d) snail
12. The largest phylum in the animal kingdom is
- (a) cnidaria (b) Mollusca (c) chordate
13. With reference to the figure above, which of these are correct?
- a. I and II are proglottides and hooks
 - b. I and III are rostellum and suckers
 - c. III and IV are hooks and proglittides
 - d. II and IV are hooks and rostellum
14. The two species of human tapeworm can be distinguished by the presence or absence of
- (a) scolex (b) hook (c) head (d) sucker
15. The ventricles of the mammalian heart are more muscular than the auricles because the
- (a) auricles have smaller capacity
 - (b) ventricles are larger in size
 - (c) ventricles pump blood to distant organs
 - (d) ventricles receive more blood.
16. Which of the following statement is not correct about the function of each group of mammalian vertebrate?
- a. caudal viiebrae support the tail and provide attachment for tail muscles
 - b. thoracic vertebrae articulate with the ribs
 - c. lumber vertebrae provide attachment for abdominal muscles.
 - d. sacral vertebrae support the skull and allow nodding and rotating of movement.
17. In the adult toad, gaseous exchange takes place through
- (a) Buccal, skin and spiracle
 - (b) buccal cavity, bladder and lungs
 - (c) buccal cavity, skin and lungs
 - (d) gills, skin and buccal cavity.
18. The foot of the bird shown below is strong and has strong claws on its digits. This implies that the bird
- (a) is a scavenger (b)is a bird of prey
 - (c) uses the foot to supplement wing action
 - (d) uses the foot to scratch the soil
19. Which of the following is not a means of conservation?
- a. replacing harvested mature timber trees with their seedlings
 - b. prevention of poaching
 - c. controlling excessive deforestation
 - d. burning of vegetation before cropping
20. One of the following statements is not true of viruses
- (a) they are micro-organisms (b) they are smaller than bacteria
 - (c) they can be seen with an ordinary light microscope
 - (d) they cause tobacco disease, polio and smallpox
21. The brain and the spinal cord constitute the
- (a) autonomic nervous system
 - (b) sympathetic nervous system

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(c) somatic nervous system

(d) central nervous system

22. Which of the following parts of the mammalian brain is involved in taking the decision to run rather than walk?

(a) cerebellum (b) medulla oblongata (c) midbrain (d) cerebrum

23. Which part of the ear is responsible for the maintenance of balance?

(a) cochlea (b) tympanic membrane (c) Eustachian tube (d) semi-circular canals

Answer Key

1. B 6.B 11.D 16.D 21.D

2. B 7.D 12.D 17.D 22.D

3. C 8.D 13.B 18.A 23.D

4. D 8.B 14.B 19.D

5. C 10.D 15.C 20.C

EXPLANATION TO ANSWER

1. A directional movement in which the whole organism moves is called a TAXIS.

Therefore, an amoeba will move the whole body toward a crumb cake (food) by taxis movement (B)

2. Golgi bodies — as concerned with the production of substances by this cell.

Nearly all cell secretions are glycoproteins, i.e. proteins conjugated with a carbohydrate. i.e.

Golgi-body will be

concentrated in the environment of secretory cell (B)

3. Tissue is a group of cell that have similar structures and performing a particular function e.g. bone, blood of man

(C)

4. Animal cell do not have cellulose cell wall, chloroplast and sap vacuole. The correct option is D.

5. Mitochondrion is one of the organelle in the cytoplasm and not in the nucleus (C)

6. Epiphyte grow on their host to get direct sunlight (B)

7. The collection of flower is called corolla (D)

8. Osmosis the movement of any solvent molecule through a semi-permeable membrane from a region of high

concentration to a region of low concentration (D) e.g. high water concentration to low water concentration.

9. $4H_2O + \text{chlorophyll} \rightarrow 4(OH) + 4H$

$4(OH) \rightarrow 2H_2O + O_2$

The oxygen produced during photosynthesis comes from water (B)

10. i.e. to kill and soften the tissue (D)

11. Snail is mollusca (D)

12. The arthropoda is the largest phylum in the animal kingdom. It is divided into the following classes: insect,

crustacea, arachnida and myriapoda (D)

13. I- is Rostellum, II is the Hook, III is Sucker, IV is proglottis (B)

14. Taenia solium has rostellum and hooks while Taenia saginata lack rostellum and hooks (B)

15. The wall of the right ventricle are made of muscle but not quite so thick as the left ventricle (both are thicker than

auricle). The right ventricle contracts, forcing blood to close the tricuspid valve so that blood can only leave the

ventricle by other opening into the pulmonary artery (C).

16. Sacral is not at the head region, it is located at the inner abdomen (D)

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17. Adult toad do not have gills, the gaseous exchange is through the skin, lung and buccal cavity (mouth) (D)
18. This is for scavenger (e.g. vulture) (A)
19. Burning of vegetation before cropping will kill the microorganism and change the ecosystem (D)
20. Viruses can not be seen with ordinary light microscope, electron microscope have to be employed (C)
21. Brain & spinal cord make up central nervous system (D).
22. Cerebrum controls all voluntary actions like learning, intelligence, thinking, imagination and memory which are aspect of intelligent behaviour (D),
23. The inner ear, which is fluid filled has a complicated structure. It has an upper end with the three semi-circular canals at right angles to one another, are organs of balance (D).

UNIVERSITY OF JOS 2007 POST UTME TEST

BIOLOGY

1. Where is the energy produced in a cell?
(a) nucleus (b) lysosomes (c) mitochondria (d) nucleolus
2. Which of the following organisms does not exist as a single free-living cell?
(a) amoeba (b) euglena (c) clamydomonas (d) volvox
3. Euglena is an autotrophic organism because it
(a) has flagella
(b) has plant and animal features
(c) can manufacture its food
(d) moves fast
4. In which of the following organisms does a single cell perform all functions of active movement, nutrition, growth, excretion and photosynthesis?
(a) paramecium (c) euglena (b) amoeba (d) hydra
5. What is the function of contractile vacuole in paramecium?
(a) produces enzymes
(b) gets rid of excreta
(c) stores and digests food
(d) gets rid of excess water
6. The ability of organism to maintain a constant internal environment is known as
(a) diuresis (b) endosmosis (c) plasmolysis (d) homeostasis
7. Which of the following is the medium of transportation of nutrients within unicellular organism?
(a) lymph (b) plasma (c) protoplasm (d) serum
8. In aerobic respiration, oxidative phosphorylation takes place in
(a) cytoplasm (b) lysosome (c) mitochondrion (d) ribosomes
9. Bryophytes are different from flowering plants because they
(a) are simple small plants
(b) carry out alternation of generation
(c) posses small
(d) posses no vascular tissue
10. In lower plants like mosses, the structure which performs the functions of roots of higher plants is called
(a) raots hairs (b) rhizoids (c) hyphae (d) rots

11. Which of the following components of an ecosystem has the greatest biomass?
 - (a) primary producers
 - (b) primary consumers
 - (c) secondary consumers
 - (d) tertiary consumers
12. The young shoot of a plant is referred to as
 - (a) radicle (c) bud (b) plumule (d) branch
13. The name of a bacterium which derives its energy from oxidizing nitrites into nitrates is
 - (a) Nitrosomonas (b) azotobacter (c) nitrobacter (d) Escherichia coli
14. Potometer is used to measure
 - (a) rate of osmosis
 - (b) rate of diffusion
 - (c) rate of transpiration
 - (d) rate of photosynthesis
15. Meiotic cell division ensures that
 - a. many similar cells are produced
 - b. chromosome number of cells is halved
 - c. cells produced are doubled
 - d. cells produced possess the same chromosome number
16. The stem of young herbaceous plants are kept upright mainly by
 - (a) osmotic pressure (b) turgidity (c) transpiration pull (d) root pressure
17. Which of the following tissues is not found in the stem and root of monocotyledons?
 - (a) xylem (b) cambium (c) pith (d) pericycle
18. Fruit enlargement can be induced by spraying young ovary with
 - a. gibberellins, ethylene and abscisic acid
 - b. auxin, abscisic acid and ethylene
 - c. auxin, cytokinin and gibberellin
 - d. auxin, kinin and gibberellin
19. A dry indehiscent, winged fruit formed from one carpel is known as
 - (a) schizocarp (b) caryopsis (c) samara (d) nut
20. A fruit which develops without fertilization is described as
 - (a) simple (b) aggregate (c) multiple (d) parthenocarpic
21. A dwarf plant can be stimulated to grow to normal height by the application of
 - (a) thyroxin (b) gibberellin (c) insulin (d) kinin
22. The condition known as cretinism is caused by the deficiency of
 - (a) vitamin A (b) insulin (c) thyroxin (d) vitamin C
23. The difference between viviparous and oviparous animal is
 - (a) possession of yolked eggs
 - (b) laying and brooding of eggs
 - (c) possession of yolkless egg
 - (d) laying of unfertilized egg
24. The following are features of the tropical rainforest except
 - (a) loose and moist soil
 - (b) short trees growing beneath tall trees
 - (c) scanty trees with small leaves
 - (d) presence of many animals

Answers Key

1.C 6.D 11.D 16. C 21. B

2.D 7.C 12.B 17.C 22.C

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3.C 8.C 13.C 18. C 23.B

4.C 9.D 14.A 19.C 24.C

5.D 10.B 15.B 20.A

Explanation to Answers

1. The nucleus contains the nucleolus and it is responsible for reproduction i.e. it contains the information for genetic make up. Mitochondria is usually referred to as the power house because they contain enzymes that carry out the oxidation of food substance and they synthesis ATP (adenosine triphosphate), the energy of the cell (C).
2. Some organisms are made of many similar cells which are joined or massed together and they can not be differentiated from each other. Example of such organisms which exist as colonies are VOLVOX (D).
3. The word antho means "Self". Anthotrophic is the mode of nutrition for organisms that manufacture their own food and euglena has chloroplast which makes it possible for euglena to manufacture its own food (C).
- 4 Euglena is the only organism in the option that has chloroplast for photosynthesis (C).
- 5 Contractive vacuole in paramecium is for osmoregulation i.e to get rid of excess water (d)
6. Homeostasis is defined as the maintenance of a steady state in living organisms by control of the internal environment (D).
7. The living material of the cell consists of the nucleus and cytoplasm called protoplasm. Unicellular organism exchange materials through the protoplasm (C).
8. Phosphorylation of hexose sugar is a necessary first step in the oxidative breakdown of sugar in respiration and the process of expending energy takes place in the mitochondria (C).
9. Bryophytes are complex, multicellular green plant that lack vascular tissue (D).
10. Rhizoids are the false roots in mosses (D). rhizoids grow into the soil from the base of the stem.
11. Biomass takes into account both the size of the individual organism and their numbers. The number of the species decreases and size increases as we move upward in the tropic level. The tertiary consumer has the greatest size (D).
12. Plumule is the young shoot in a plant (B) while radical is the young root.
13. Nitrosomonas convert ammonia to nitrites while nitrobacter convert the nitrite to nitrates (C).
14. The rate of transpiration is monitored using potometer (A).
15. During meiosis, the chromosome number in gametes becomes half (haploid) of the original mother cell (diploid) (B)
16. Transpiration pull involve the force which maintain the transpiration streams, these forces are strong. Root pressure is responsible for the conduction of water through the root. Turgid parenchyma makes the cell. Strong and rigid, so they give mechanical support (B)

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17. In the internal structure of the root, is a wide and clearly marked pith surrounded by ring of conducting tissue

while there is no pith in the internal structure of the stem (C).

18. Auxins promotes cell elongation and stimulate cell division likewise Gibbrellin also promote cell division,

hormone abscisic acid can make stomata close and falling off of fruits and leaf withering.

Ethylene dramatically

increase the respiration rate which leads to the ripening of fruit, cytokinins is found where rapid cell division is

occurring (C).

19, Samara is a simple tree fruit in which the pericarp is extended to form one or more wing like structures. It

develops from a superior ovary made-up of more than one carpel (C).

20. Occasionally, fruit formation occurs in the absence of fertilization known as parthenocarpy, can be induced by

treating unpollinated flowers with IAA (D).

21. Hormone Gibberellins stimulate cell division (B).

22. Thyroxine is responsible for controlling the basal metabolic rate and its therefore particularly important in

growth. Under secretion of it during development (hypothyroidism) causes arrested physical & mental development,

a condition called cretinism (C).

23. Oviparity is when the fertilized egg can be enclosed within a protective covering before it leaves the females body

as in many invertebrates. Viviparity is when the embryo is protected and nourished within the uterus, with the

placental of mammals (B).

24. The tropical rainforest vegetables is dominated by tall trees with their widespread canopies.

The plant

community falls into five layers and can be identified with three top layer of trees. The soil is most and loose rich in

humus. Scanty trees with small leaves in a feature of savannah vegetation (C).

UNIVERSITY OF JOS 2008 POST UME TEST

ENGLISH

Read the following passage and answer the questions based on it

Why should an artist attempt to concentrate his experience of life in a unique work of art? No

Final answer can be

given, but two possible reasons suggest themselves. Man seems always to have preferred order to disorder. His

whole progress on earth has been a struggle to this end. Everything he has done, from the creation of vast empires to

the growing of small gardens, has been triumph, in greater or lesser degree, of order over chaos.

To help control his

own thought, the sudden surprises of his limitless mind, he has had to invent Language. As each new thing appears,

whether it be an idea or an object, he gives it a name and thus brings it into line with the things he already

understands. And he has invented for himself more than one kind of language. There is a language of painting, a

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language of architecture, or mathematics-to name but three. Each has its own special symbols, its own form of logic; and each enables him to express some of the myriad thought that crowd his mind. High among the languages of man is the language of music.

1. Through his struggles man has achieved
 - a. the growth of disorder from order
 - b. the transformation of order out of chaos
 - c. the return of a state of utter confusion
 - d. the complete destruction of vast empires
2. Man invent the Language because
 - a. he already had control over his mind and its countless ideas
 - b. it helped to organize his thought and unceasing ideas
 - c. there was little he could do at the time to diversify his talents
 - d. it was a method of realizing his position as a Supreme Being
3. By naming objects or ideas, man was able to
 - a. clarify things and correlate them with facts already known
 - b. allow an area of complete confusion to develop in language
 - c. comprehend less and less the things around and about him
 - d. make visual impressions for more important than ever before
4. The various languages can be identified by
 - a. the endings of the various symbols and their simplified logic
 - b. their use of the same marks or signs and system of logic
 - c. their own science of reasoning and their peculiar marks or signs
 - d. the manner in which their logic agrees and their symbolism is similar
5. The work "myriad" (line 12) as used in the context means _____

In each of the Questions 6-10, there is a gap. Complete the gaps with appropriate item from the options A-D under each sentence.

6. If you try to write without having a clear idea, you often end up just _____ without saying anything very meaningful
 - a. gambling
 - b. rambling
 - c. drooling
 - d. boasting
7. The four of you should share the remainder you
 - a. between
 - b. within
 - c. among
 - d. around
8. I have no doubt that Enyinba will _____ Oaks next Saturday
 - a. win
 - b. ship
 - c. flog
 - d. beat
9. "You need not go _____ down the road before you notice a huge white building on the road", the man said
 - a. further
 - b. farther
 - c. inside
 - d. deep
10. If your writing lacks coherence, your reader will just find something else to read or If your writing lacks coherence, your reader will just find something else to read or _____ the television.
 - a. tune in
 - b. turn on
 - c. open
 - d. switch on

Choose the appropriate option to complete the followings:

11. This picture is ascribed to Leonardo da Vinci. This means that _____
 - a. Leonardo da Vinci painted it
 - b. Leonardo da Vinci definitely painted it
 - c. Leonardo da Vinci might have painted it
 - d. Leonardo da Vinci did part of the painting
12. The Principal's reference to the cane _____ the boy with much mental uneasiness
 - a. afflicted
 - b. inflicted
 - c. assaulted
 - d. insulted

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13. The President promised a higher allocation to the education sector in this year's budget ____ a. did he? b. didn't he? c. doesn't he d. isn't he?
14. His three sons, Sanmi, Chukwu and Collins are eleven, nine and seven _____ a. succeedingly b. respectedly c. respectively d. successively
15. The government's envoy has left the country again in his latest round of trouble shooting. The underlined expression means a. peace making efforts b. trouble making efforts c. trip marring efforts d. troublesome efforts
16. Hundreds of cars went _____ us before we were given a ride to the campus a. past b. pasted c. passed d. by
17. You told me that Johnson is your trusted friend, why did you not stand up for him during his trial? a. pity b. defend c. ridicule d. disown
18. As the examination progressed, it was observed that more and more candidates stared into space. This means many candidates a. looked into the sky b. looked through the window for would-be helpers c. looked straight for long but to nothing in particular d. tried to ensure that the spaces between them were well maintained.
19. When you pronounce the word university, how many sounds could you perceive? a. 5 b. 10 c. 8 d. 4

ANSWER KEY

1. B 2. B 3 A 4. C 5 B 6 B
7. C 8 A 9A 10 B 11 A 12B
13. B 14 C 15 A 16 A 17 B 18D 19 A

UNIVERSITY OF JOS 2008 POST UME TEST

BIOLOGY

1. One of the functions of xylem
(a) strengthening the stem
(b) manufacturing food
(c) conducting manufactured food
(d) none of the above.
2. People suffering form myopia
(a) can see near objects clearly
(b) can see far away objects clearly
(c) cannot see any object clearly
(d) are colour-blind
3. The cilia in paramecium are used for
a) respiration (b) locomotion (c) protection (d) excretion
4. Which of these types of skeleton is most appropriate to the cockroach?
(a) hydrostatic skeleton (b) exoskeleton (c) endoskeleton (d) cartilaginous skeleton
5. When proteins are broken down they provide
(a) oxygen (b) carbohydrate (c) energy (d) amino acids
6. The function of lenticel is
(a) to receive excess water in the plant
(b) to absorb water from the atmosphere
(c) for gaseous exchange
(d) to absorb light
7. Which of the following is characteristic of the animal cell
(a) presence of chloroplasts

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- (b) possession of a cellulose cell wall
 - (c) absence of large vacuoles
 - (d) presence of large vacuoles
8. In the life history of *Schistosoma* (Bilharzia), of the following is the intermediate host
(a) man (b) snail (c) mosquito larva (d) fish
9. The hormone which tones up the muscles of a person in the time of danger is from the
(a) thyroid gland (b) pancreas (c) adrenal gland (d) spleen
10. The study of the organisms and the environment of an abandoned farmland is the ecology of
(a) a community (b) a population (c) a species (d) an ecosystem
11. At fertilization
- a. one chromosome from the male joins another from the female
 - b. one gene from the male combines with the other from the female
 - c. the male nucleus fuses with the female nucleus
 - d. one set of chromosome combines with another set from the female
12. The neck region of the tapeworm (*Taenia* spp.) is responsible for the
(a) production of eggs (b) the storage of eggs (c) the formation of new segments (d) the development of the suckers.
13. The movement of molecules from a region of higher concentration to one of lower concentration is
(a) diffusion (b) transpiration (c) osmosis (d) plasmolysis
14. The region of cell division in a root is
(a) root cap (b) endodermis (c) xylem (d) Meristem
15. Which of the following is not an excretory organ?
(a) Lungs (b) kidney (c) leaf (d) large intestine
16. The part of the mammalian brain responsible for maintaining balance is
(a) medulla oblongata (b) cerebellum (c) optic lobe (d) cerebrum
17. A sugar solution was boiled with Fehling's solutions A and B and the colour remain blue. The sugar tested was
(a) glucose (b) maltose (c) fructose (d) sucrose
18. The blood vessel which carries digested food from the small intestine to the liver is
(a) renal vein (b) renal artery (c) hepatic artery (d) hepatic portal vein
19. The maize grain is regarded as a fruit and not a seed because
(a) it is covered by a sheath of leaves
(b) the testa and fruit wall fuse after fertilization
(c) it has both endosperm and cotyledon
(d) the pericarp and seed coat are separate
20. Identical twins are produced under one of the following conditions
- a. Two ova fertilized at the same time by the sperm
 - b. One ovum fertilized, divides to give two embryos
 - c. Two ova fertilized by one sperm
 - d. One ovum fertilized by two sperms
21. Which of the following hormones is produced during fright or when agitated?
(a) insulin (b) adrenalin (c) thyroxine (d) pituitary
22. Grasses — Grasshopper — Lizards — Snakes — Hawks.
In the food chain, the organisms which are the least in number are
(a) grasses (b) hawks (c) lizards (d) snakes
23. One significant difference between roots and stem is that
- a. branch root originate in the pericycle while branch stems do not.
 - b. Stems are always below the ground while roots are always under the ground

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- c. Stems are positively geotropic while roots are negatively geotropic
d. Stems are sometimes used for storage while roots are never so used.
24. The arrangements below are steps in protein digestion. Which is the correct sequence?
A — polypeptides, B — protein, C — amino acids, D — peptones
(a) a→b→c→d (b) c→d→a→b (c) b→c→a→d (d) b→d→a→c
25. Partially digested food ready to leave the stomach is called (a) chime (b) curd (c) glycogen (d) paste
26. The particles found in the blood which play an important role in blood clotting are called (a) platelets (b) red blood cells (c) monocytes (d) granulocytes
27. In a cross between a normal male and a female carrier for haemophiliac disease, the percentage of their sons expected to suffer the disease as haemophiliac is (a) 25% (b) 50% (c) 70% (d) 45%

ANSWERS KEY

- 1.C 6.C 16 B 16.C 21.B 26.A
2.A 7.C 12.C 17.A 22.B 27.B
3.B 8.B 13.B 18.D 23.A
4.B 9.C 14.A 19.B 24.D
5.D 10.A 15.D 20.B 23.A

EXPLANATION TO ANSWER

1. Xylem contains several large thick-walled tubes called in which the soil solution is carried from the roots to the leaves (C).
2. Myopia is short-sightedness i.e. can only see near object clearly (A)
3. Cilia is common to protozoa like paramecium, it is used for movement (locomotion) (B).
4. Exoskeleton is common to arthropod like cockroach (B).
5. Protein is built from units of amino acid. Amino acid is the product of protein digestion (D).
6. Lenticels is the organ for gaseous exchange in the stem of plant (C).
7. The vacuole in animal cell is smaller when compared to that of plant cell (C).
8. Snail is the secondary host of bilharzias (B)
9. The adrenal glands near the kidneys produce neutral hormones, one of which is adrenalin. Adrenal glands are stimulated by the nervous system when an animal feel frightened or anxious (C).
10. The collection of population makes up a community. (A)
11. (B)
12. (C)
13. Diffusion is the movement of molecules or ions form a region of higher concentration to that of lower concentration. (A)
14. Tissue which are capable of cell division are called Meristem. Those responsible for the increase of length of roots and stems are found at the tips and are therefore the region of cell division which is at the apical region (i.e. tips of the roots) (A)
15. Large intestine is involved in digestive system (D)
16. The cerebellum is concerned with hearing, balance and muscular control (C).
17. Test for reducing sugar (glucose)
18. Hepatic portal vein carries digested food form small intestine (D).
19. Maize is really a fruit, because the outer coat covering the grain represents the pericarp of the fruit fused with

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the testa to the seed (B).

20. The ovum divides after fertilization (B).

21. Adrenalin is produced from adrenal gland (B).

22. The number decreases while the size of the species increase as we move to the upper trophic level of the food chain (B)

23. (A)

24. Protein > peptone(d) > polypeptide (a) > amino acid(c). (D).

25. The walls of the stomach are muscular and regular peristaltic movements churn up the food, mixing it thoroughly

with the gastric juice. By the time it is ready to leave the stomach, the food looks like a watery paste, called CHYME

(A).

26. (A)

27. Hemophilia is an abnormality controlled by a recessive gene located on the y - chromosome. The percentage of

the carrier is 50% (B)

UNIVERSITY OF JOS 2009 POST UME SCREENING TEST

ENGLISH

Comprehension

Read the following passages carefully and answer the questions that follow.

Passage I

The best acceptable definition of history is that it is a record of the past actions of mankind, based on surviving evidence. It is this evidence that the historian employs to chronicle and correlate events, by which he arrives at conclusions which he believes to be valid. Hence, the historian is referred to as an interpreter of the development of mankind.

It should be understood that there is more than one way of treating the past. For example, in trying to deal with the revolutions in Nigeria, past and present, the historian may describe the events in a narrative order. Or, he may choose to concentrate on analysis of the general causes, comparing their stages of evolution with the patterns of revolution in other countries.

The historian does not seek to attain the same kind of results as the scientist, who can verify his conclusions by

repeating his experiment under controlled conditions. Whilst he also attempts to classify the phenomena, the

historian is more likely to consider events in terms of their uniqueness.

Added to this is the fact that history is concerned, fundamentally, with the lives and actions of men, and as such, the

historian's search for causes is bound to be relatively subjective, as compared to that by the scientist. In essence,

however, historians are agreed and insist that history should be written as scientifically as possible and that the

evidence should be analyzed with the same objective attitude employed by the scientist when he examines certain

phenomena of nature.

1. According to the passage, a historian should try to examine a material
A. scientifically B. subjectively C. accurately D. objectively
2. According to the passage, one of the duties of a historian is
A. to predict the future
B. to analyse the past and future
C. to explain the significance of past events
D. to interpret the development of mankind
3. The scientist tends to be more reliable than historian because
A. he works in a laboratory
B. he is better qualified
C. he can crosschecked his result several time
D. he has more time to work at his Experiments
4. How can history be scientifically recorded?
A. by examining available evidence and analyzing unusual occurrences
B. by falsifying and fabricating available facts
C. by speculating on what was and ought to have been
D. by concealing some of the evidence
5. History could be defined as
A. a record of the evolution of a country
B. a record of development of mankind
C. a record of the present actions of mankind based on surviving evidence
D. a record of the past action of mankind based on surviving evidence

Passage 2

From the apex of the Niger Delta southwards, dry land, overgrown with dense forests still virginal in various spots, gives way to seasonally inundated zones. Here, sweet water swamps with strands of raffia palms gradually merge into tidal swamps of brackish ooze, where mud skippers thrive under the arching roots of mangroves. The Niger, fingering through a thousand creeks, meet the sea in a dozen estuaries. Strong rives currents drifts and mud across the river mouths, scaling tern again and again to navigation.

6. Where do mudskippers thrive?
A. in the creeks B. in the swamps C. in the mangroves D. in the roots
7. "Fingering through" as used in the passage means
A. cutting across B. passing through C. cutting between D. passing between
8. According to the passage, how would you describe a seasonally inundated zone?
A. a zone always covered with mud
B. a zone always covered with shallow water
C. a zone under water at certain times of the year
D. a zone subject to heavy rain every season
9. Where does the Niger meet the sea?
A. in the creeks B. in the Delta C. in the swamps D. in the forest
10. What is brackish ooze?
A. a strong river current
B. a mixture of fresh water and mud
C. a mixture of fresh water and salt water
D. fresh and clean water

LEXIS AND STRUCTURE

In each of the following sentences, there is one word underlined and one gap. From the list of words lettered a- e choose the word that is most nearly opposite in meaning to the word underlined and which will appropriately fill the gap in the sentence. (11—15)

11. Athletes wishing to get rid of theirand get more energy should take more exercise

A. fat B. oxygen C. lethargy D. trainers E. spots

12. A metal will expand when it is heated and When it cools.....

A. shorten B. lesser C. contract D. congeal E. curtail

13. The political aspirant asked the villagers to support him and not to..... his authority in any way

A. deny B. undermine C. defy D. despite E. attack

14. She was a very proficient hairdresser but had little aptitude for sewing in which she was...

A. new B. unskilled C. unlearned D. ignorant E. awkward

15. If you do not accept the offer of a job in the Secretariat within the next one week, we shall assume you..... It

A. denied B. refused C. deprived D. left E. lost

From the list of words lettered a-e below each of the sentences, choose the one which is nearest in meaning to the underline word as it is used in the sentences (16-20)

16. The examiner said that the candidate's performance in the examination was not good enough

a. failure b. achievement c. success d. presentation e. marks

17. After finishing the 800 meters race, he fell asleep from exhaustion

a. weakness b. fatigue c. overwork d. eagerness e. sloth

18. Last night there was a very fierce rain Storm

a. raging b. storming c. angry d. violent e. ferocious.

19. After Warn, on our way to Benin, we passed through a dense forest

a. crowded b. close c. thick d. heavy e. wooded

20. The footballers went back to their camp sullenly

a. cheekily b. quickly c. stubbornly d. resentfully e. silently

In each of the following questions 21-25, fill each gap with the appropriate option from the list. Following exercises

express different times by using different tenses.

From the natives suggested, choose any one that best suits each context

21. More..... to your elbow as you campaign for press freedom

a. energy b. power c. effort d. grease e. kinetic

22. Sir, I'm not lying about the matter, I know nothing of it, if I knew

a. I must tell you b. I can-tell you c. I would tell you d. I shall tell you

23. The editor was not happy that the Nigeria press was hemmed

a. up b. across c. in d. over e. sideways

24. A child that shows mature characteristics at an early age may be described as

a. precocious c. premature b. ingenuous d. preconceived

25. That is a very terrible woman; everyday she makes a lot of noise about one thing or the other. I'm not surprised,

that's what her sisters too .

a. are used to doing b. do c. always used to do d. are doing

ANSWER KEY

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1. D 2. D 3C 4 A 5 D
6C 7. B 8 D 9B 10C
11 C 12C 13. B 14 B 15B
16 B 17 B 18A 19 C 20D
21D 22 C 23 C 24A 25B

UNIVERSITY OF JOS 2009 POST UME TEST

BIOLOGY

- One of these is not found in the urine
(a) water (b) sodium chloride (c) nitrogenous compounds (d) calcium chloride (e) nitrogenous salts.
- An organism with a pair of indistinguishable genes is a
(a) heterozygote (b) hybrid (c) allelomorph (d) homozygote (e) diploid
- The fruit formed from a single flower having several free carpels is called
(a) multiple fruit (b) Simple fruit (c) aggregate fruit (d) dehiscent fruit (e) indehiscent fruit.
- The function of ossicles (malleus, incus and stapes) in the mammalian ear is to
a) transmit vibrations b) regulate pressure c) support of the inner ear d) maintain balance during motion
e) secrete oil
- "Joined skeleton" is absent in the a) cockroach b) spider c) millipede d) snail e) house fly
- Mucor and spirogyra can be put in a group because
a. Are unicellular
b. Have spores that are dispersed by wind
c. Can live independent lives
d. Reproduce sexually
e. Have bodies made up of thallus and filaments alternatively.
- The organ through which nourishment and oxygen diffuse into an embryo is called
a) Amnion b) chorion c) umbilical cord d) oviduct e) placenta
- A tapeworm fastens itself to the intestine of its host with
a) Neck & sucker
b) hooks & suckers
c) rostellum & suckers
d) proglottis & neck
e) rostellum hooks & suckers
- Which of these is false about the piliferous layer of a root? It
a) Has a thin cuticle
b) Is the outermost layer of the cortex
c) May bear root hairs
(d) Breaks down with age
(f) Is replaced by cork in old roots.
- Anaerobic respiration in yeast produces
a) CO₂ & ethanol
b) CO₂ & H₂O
c) CO₂ & O₂
d) CO₂ & glucose
e) Ethanol & H₂O
- Which one of these sets of factors is completely abiotic?
(a) Turbidity, tide salinity, plankton
(b) pressure, pH, soil insect
(c) Water, soil, bacteria, salinity

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- (d) pH, bamboos, wind, rainfall
- (e) Light, altitude, wind, humidity
- 12. In which of these are flagella and cilia found?
(a) Flatworms (b) Protozoa (c) Coelenterates (d) Annelids (e) Nematodes
- 13. The three important organs that are situated close to the stomach are
(a) Liver, kidney & gall bladder
(b) pancreas, liver & kidney
(c) Gall bladder, pancreas & spleen
(d) liver, kidney & spleen
(e) kidney, gall bladder, liver
- 14. The plantain reproduces asexually by
(a) Spores (b) Buds (c) Fragments (d) Suckers (e) Flowers
- 15. The major function of swim-bladder in fish is
(a) Breathing (b) Swimming (c) Diving (d) Repelling enemy (e) Buoyancy
- 16. The part of the central nervous system concerned with answering an examination question is the
(a) Spinal Cord (b) Cerebellum (c) Oryx (d) cerebrum (e) Medulla oblongata
- 17. Wind pollinated flowers usually have
(a) long styles
(b) sticky stigmas
(c) small and short stigmas
(d) rough pollen grains
(e) small styles and pollen
- 18. The radicle of a bean seedling grows most rapidly in the region
(a) of the root tip
(b) below the top soil
(c) just around the root tip
(d) just below the root tip
(e) just above the root tip.
- 19. A key similarity between nervous and hormonal system is that both
a) Involve chemical transmission
b) Have widespread effects
c) Shed chemicals into the blood stream
d) Evoke rapid response
e) Eliminate response
- 20. The bone of the neck on which the skull rests is
(a) Odontoid (b) Axis (c) Occipital (d) Atlas (e) patella
- 21. A child blood group genotype different from those of both parents and with a mother of genotype OO, can only have a father of genotype (a) A (b) B (c) OO (d) AB (e) AA
- 22. A true climax community
a) changes from year to year
b) persists until the environment changes
c) Is the first stage in plant succession
d) Consists of tallest trees and small animals
e) Is in a state of perturbation.
- 23. In a predator food chain involving secondary and tertiary consumers, the organisms become progressively
(a) smaller

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- (b) equal in number
- (c) large and fewer along the food chain
- (d) parasitized along the food chain as consumers get bigger
- (e) sparse in distribution.

24. Which one of these is an adaptation to a xerophyte environment?

- a) fleshy tissue with reduced leaves
- b) extensive surface roots and broad leaves
- c) thick barks and broad leaves
- d) rough leaves and shallow root system
- e) stunted growth and surface roots.

25. When it is cold, the blood vessels of the skin

- a) dilate to increase blood flow to the skin
- b) constrict to reduce the amount of blood flowing to the skin
- c) dilate to reduce the amount of blood flowing to the skin
- d) constrict to increase the amount of blood flowing to the skin

ANSWERS KEY

- 1. D 6.B 11.C 16.D 21.D
- 2. D 7.E 12.B 17.C 22.B
- 3. C 8.B 13.C 18.A 23.C
- 4. A 9.A 14.D 19.D 24.A
- 5.D 10.A 15.E 20.D 25.B

EXPLANATION TO THE QUESTIONS

1. Calcium chloride is not found in urine. Urine contains sodium chloride, urea, water in addition to other compounds

(D).

2. An individual is said to be homozygous if it has two similar genes for the same character i.e. it has two identical

alleles at the same position on a pair of chromosomes e.g. TT is for tallness (D).

3. Aggregate fruits are produced from a single flower with an apocarpous pistil i.e. several free carpels and hence a

collection of simple fruit e.g. cola-fruit and rose fruit (C)

4. Three tiny bones called ossicles, fit against one another to form a chain of bones stretching from the inside of the

eardrum across the middle ear. Sound vibration travel down the outer ear and vibrate the eardrum. This causes

vibration of fluid in the inner ear, so that the sensors cells in the cochlea receive the stimulus (A)

5. Snail do not have joined skeleton, its soft body muscle is enclosed or housed in a shell(D)

6. They can form spores which can be blown by wind (B)

7. The embryo develops an organ called the placenta. The placenta is firmly attached to the wall of the uterus and

through it nourishment and Oxygen are obtained by the embryo from the mother and waste products are removed

(E)

8. On top of the scolex is a projection called the rostellum, which has hooks and four evenly spaced sucker on the

outside. The tapeworm fasten itself to the intestine using hooks & sucker (B)

9. The outermost layer of the cortex is called piliferous layer. Unlike the epidermis of the stem, the piliferous layer

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has no cuticle (A).

10. Anaerobic respiration is the breaking down of complex molecules in the absence of Oxygen to give carbondioxide

and Ethanol(A)

11. Abiotic factors in ecology study are those that do not involve living things e.g temperature, Rainfall, Relatives

humidity, light, pressure soil acidity, topograph are commonly called Edaphic factors c

12 Flagella and cilia are locomotive organs i.e. for movement, paramecium use cilia while eugelena use flagella, it is

common to protozoa (B).

13 Gall bladder, pancreas & spleen are available in the stomach

14. Sucker is the root part of plantain & it is also used for vegetative propagation (D)

15. Swim bladder is used for buoyancy in fish (E)

16. The cerebrum controls all voluntary action like learning intelligence, thinking, imagination and memory which are

aspect of intelligent behavior (D)

17 Small and short stigmas are feature of wind- pollinated flowers (C).

18 Apical meristems are responsible for the increase in length of roots and stem, re found at the tip of stem and root

(A).

19 Nervous and hormonal system are both reflex action, it is rapid and automatic response to stimulus without the

involvement of the brain (D).

20 The skull rest on the atlas bone of the cervical vertebra (D).

37

21 Since mother blood group —O (JOJO) the child can only have a father with blood group AB, to have a blood group

different from both parents i.e. either blood group A or B (D).

22 A climax community do not change form time to time, it persists until the environment change (D).

23 As we move upward in the food chain, the size of the organism increased and become fewer in number (C).

24 Xerophyte are plant adapted with desert habitat. They have flashy tissue and reduced leaves to reduce

transpiration and (water lose) and extensive roots for water. Hydrophytes are aquatic plants with broad leaves, to

tap enough sunlight, for photosynthesis i.e. increase in rate of water loss and short roots since water is in abundance

(A).

25 In cold, the blood vessel in the skin will get smaller (or constrict) so that very little blood will reach the skin

surface, this reduces heat loss by radiation (B).

UNIVERSITY OF JOS 2010 POST UME TEST

ENGLISH

In each of questions 1 and 2, choose the option that best completes the gap(s)

1. The car owner does not think about the of..... his vehicle and other payment involved in owing it

(a) transportation (b) appreciation (c) calculation (d) appreciation

2. We shall offer a good job to a _____ to register guests in the Central Hotel

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(a) waiter (b) watchman (c) cashier (d) receptionist

Choose the words that are closer in meaning to the words in initial positions

3 Futile: (a) worthless (b) vain (c) dangerous (d) useless

4 Halt: (a) wait (b) fault (c) stop (d) stay

5 Virtuous: (a) seeing (b) good (c) upright (d) religious

6 Renowned: (a) famous (b) popular (c) well read (d) familiar

7 Solitary: (a) private (b) sultry (c) alone (d) lonely

In each of the questions 8 and 9, choose the option opposite in meaning to the word in italics

8. Lola was agitated when the sad news of her mother's accident was broken to her.

(a) excited (b) calm (c) uncontrollable (d) unreasonable

9. The President took exception to the ignoble role the young man played in the matter

(a) honourable (b) embarrassing (c) dishonourable (d) extraordinary

In each of questions 10 to 12, select the option that best explains the information conveyed in the sentence.

10. The crowd in the hail is intimidating

(a) the crowd is frightening (b) the crowd is angry (c) the crowd is overwhelming (d) the crowd is riotous

11. the events of last Friday show that there is no love lost between the Principal and the Vice Principal

(a) they like each other (b) they work independently (c) they cannot part company (d) they dislike each other

12. Adawo is an imp

(a) Adawo behaves badly (b) Adawo behaves decently (c) Adawo behaves differently (d) Adawo behaves queerly

In questions 13 and 14, select from the option to fill in the gaps

13. There is not _____ sense in what that politician has just said

(a) many (b) plenty (c) lot of (d) much

14. The candidate made _____ at the village square a day before the elections

(a) a sermon (b) an address (c) a eulogy (d) a speech

In each of questions 15 to 17, choose the option that best completes the gap(s)

15. The city _____ as a federal capital only _____ the last twenty years.

(a) existed/over (b) has existed/for (c) was existing/from (d) is existing/in

16. The members of the other team agree _____ at the terms of the contract.

(a) on (b) by (c) to (d) with

17. He is _____ Kaduna _____ an official assignment

(a) at/in (b) at/for (c) in! on (d) for/in

In each of questions 18 and 19, choose the word or phrases which best fill(s) the gap(s)

18. The buildings damaged by the rainstorm _____ schools, hospitals and private houses

(a) included (b) include (c) were included (d) was including

19. After Jerry had made the bed, he _____ on it (a) layed (b) laid (c) lied (d) lay

In each of questions 20 and 21, fill the gap(s) with the most appropriate option.

20. _____ any problems, I shall travel to London tomorrow on a business trip

(a) in spite of (b) given (c) barring (d) in case

21. I can't stand people prying into my private life, Ladi said _____ agreed Agbemua

(a) me either (b) me too (c) me also (d) like wise me

In each of questions 22 to 25, choose the option that has the same consonant sound as the one represented by

the letter(s)-underlined

22 school: (a) cool (b) chart (c) itch (d) leech

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23 pharmacy: (a) every (b) rough (c) plough (d) wave

24 Cheap: (a) machine (b) sheep (c) chip (d) chemist

25 happy: (a) our (b) eyes (c) honour (d) behind

ANSWER KEY

1. A 2.D 3 D 4C 5B 6A

7. C 8B 9A 10 11A

12A 13.D 14B 15D 16C

17C 18B 19D 20C 21 D

22A 23B 24 C 25D

UNIVERSITY OF JOS 2010 POST UME TEST

BIOLOGY

1. Which of the following is the basic unit of classification of plants and animals?

(a) genus (b) species (c) phylum (d) kingdom.

2. Alternation of sexual and asexual method of reproduction is found in

(a) euglena (c) blue green algae (b) ferns (d) grasses

3. _____ is not a non-seed plant

(a) cycad (b) conifer (c) fern (d) none of the above

4. Which type of association is shown by a fern growing on the stem of oil palm?

(a) epiphytism (b) saprophytism (c) commensalism (d) symbiosis

5. Which of the following is likely to encourage inbreeding in plants?

(a) dioecious (b) predation (c) monoecious (d) hermaphrodite

6. The biological association that contributes directly to succession in a community is

(a) competition (b) predation (c) parasitism (d) commensalism

7. Grasses recover quickly from bush fires in the savanna because of their _____

(a) fibrous roots (b) succulent stems (c) perennating organs (d) rapid growth rate

8. The ability of an organism to live successfully in an environment is known as _____

(a) resistance (b) competition (c) succession (d) adaptation

9. The community of plants in which the same species occur from year to year is the _____

a) perennial species (b) climax species (c) pioneer vegetation (d) annual species

10. _____ is an autotrophic mode of nutrition

(a) chemosynthesis (b) saprophytism (c) parasitism (d) symbiosis

11. Which of the following is not an organ? (a) leaf (b) kidney (c) heart (d) bone

12. Mendel's first law is known as the law of

(a) use and disuse

(b) segregation of genes

(c) evolution

(d) independent assortment of genes.

13. An interlocking form pattern of feeding relationship is called

(a) food chain (b) nutrition (c) consumer (d) food web

14. The group of animals described as glorified reptiles is

(a) Pisces (b) amphibian (c) Ayes (d) Mammals

15. The anal and dorsal fins of fish are used for

(a) steering (b) buoyancy (c) upward movement (d) controlling rolling movement (e) downward movement

16. The significance of mitosis includes all of the following except

(a) genetic stability (b) growth (c) cell replacement (d) degeneration

17. Which of the following is absent in the prophase stage of meiosis?

(a) leptonem (b) zygonem (c) pachynem (d) triplonema

18. The photosynthetic pigments include

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- (a) chlorophyll and carotenoids
 - (b) chloroplasts and cytochromes
 - (c) melanin and haemoglobin
 - (d) carotenoids and haemoglobin
19. Which of the following produces both hormones and enzymes?
(a) pancreas (b) ileum (c) gall bladder (d) kidney
20. Of the following, which one lacks chaetae, tentacles and antennae?
(a) snail (b) earthworm (c) millipede (d) snake
21. Etiolation is caused by the influence of
(a) CO₂ (b) water (c) mineral salt (d) HCl (e) light
22. Epigeal animation can be found in
(a) sorghum (b) maize (c) millet (d) groundnut
23. _____ is not sex-linked. (a) Stunted growth (b) river blindness (c) haemophilia (d) colour blindness
24. The pyrenoid in spirogyra
(a) usually contains starch
(b) is suspended cytoplasmic strands
(c) is mainly used for respiration
(d) excrete waste product.
25. Flower is to the angiosperm as _____ is to gymnosperm
(a) pines (b) cords (c) cone (d) anther

ANSWER KEY

- 26.D 6.A 11.D 16.C 21.E
27.B 7.A 12.B 17.B 22.D
28.B 8.D 13.D 19.A 23.B
29.C 9.B 14.C 19.A 24.A
30.C 10.A 15.D 20.D 25.C

EXPLANATION TO ANSWERS

1. All living things are classified into 2 major kingdoms, plant and animal kingdom (D)
2. The prothallus of a fern is equivalent to the gametophyte generation of a moss because it generations. That is, in their life cycle a sexual (sporophyte) generation and sexual (gametophyte) generation alternate (B). bears the sexual organs, while the fern plant is equivalent to the sporophyte or spore bearing generation, so we can say plant like fern and mosses show alternation of generations. That is, in their life cycle a sexual (sporophyte) generation and sexual (gametophyte) generation alternate (B).
3. Conifer belongs to the gymnosperms family. These are plant with naked seeds, they do not bear flowers. The seeds are borne on special structures called Cones (B)
4. Fern and oil-palm commensalism. The epiphyte (fern) get enough sunlight to carry out photosynthesis by climbing on the palm oil tree. In commensalism association, one partner benefits while the other, the host is unaffected c.
5. Plants in which both pistillate and staminate flowers are borne on the same plant are called Monoecious. Diecious is when pistillate and staminate are on separate plant. Monoecious encourage inbreeding c

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6. Competition involves the interactions among two organism of the same species or different species in which one outgrow or survive (A)
7. This is because of their fibrous roots which germinate rapidly and are fire resistance (A)
8. Living organ-isms are found in different types of habitats. These organisms show feature that enable them to live successfully in these environments. These may be functional, behavioural or structurally. Such factures are called adaptation (D).
9. This is the final community or what ecologist call the Climax of the succession (B)
10. Chemosynthesis is the synthesis of organic compounds from CO₂ and H₂O but the energy instead of coming form light is supplied by special method of respiration involving the oxidation of various inorganic materials such as hydrogen sulphide ammonia. Chemosynthesis is used by certain bacteria (A).
11. Bone is not an organ but a tissue (D)
12. Mendelian's first law of segregation states that contracting factors (i.e. genes are present in pairs in nonreproductive or somatic cells so that when an organism forms a gamete the pair separate (B)
13. Numerous food chains are present in an ecosystem and these are linked together in a food web (D).
14. (C)
15. Pectoral and pelvic fins are moved independently and are used for steering and balancing and also for back and forward movement. (D)
16. Mitosis takes place when cells divide during growth, development and also during asexual reproduction. Mitosis enhance generation stability but is not involved in cell replacement (C).
17. -
18. Haemoglobin is involved in blood circulation, Melanins are for skin colouration, cytochromes are not pigments involved in photosynthesis. The chloroplasts contain a mixture of several pigments, the main one being chiorophylls, caretenoids and xanthophyll (A)
19. Pancreas produced insulin for sugar regulation and produce enzymes like pancreatic amylase, lipsin and pancreatic lipase (A)
20. Snake do not possess all the mentioned features (D)
21. Light is required for photosynthesis and chlorophyll without which photosynthesis can not take place. A seedling grown in the dark becomes etiolated. It is yellow, due to lack of chlorophyll (E).
22. Epigeal germintaion is defined as the type of germination in which the cotyledons or seed leaves are carried above the soil surface. It is associate with dicotyledons like groundnut, cowpea and melon (D).
23. River blindness is caused by roundworm and other filarial worms (B)
24. Starch grains normally accumulate around the pyrenoids when exposed to light (A).
25. C

**UNIVERSITY OF JOS 2006 POST UME TEST
CURRENT AFFAIRS**

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1. The military coup of July 25, 1975 which topped General Yakubu Gowon from power took place when he was attending which important event?
 - a. OAU Summit in Kampala
 - b. UN General Assembly in New York
 - c. Assembly of Heads of States of ECOWAS in Monrovia
 - d. The Olympic Games
2. Which of the following political parties did not participate in the 1979 General Elections in Nigeria?
 - a. Unity Party of Nigeria
 - b. National Party of Nigeria
 - c. Social Democratic Party
3. Alhaji Shehu Shagari was sworn in as President of the Federal republic of Nigeria in 1979 by:
 - a. Justice Fatai Williams
 - b. Justice Adetokunbo Ademola
 - c. Justice Salihu Modibbo Alfa Belgore
 - d. Justice Isa Mohammed
4. The British took over Nigeria through
 - a) Negotiation (b) Bargaining (c) War (d) The Sea
5. Which of the following courts served as the highest judicial organ for Nigeria up till 1963?
 - a. Supreme court
 - b. Federal Court of Appeal
 - c. Appellate court
 - d. The privy council
6. What was the primary purpose of the Sir Henry Willinks Commission of Inquiry?
 - a. To approve the independence of Nigeria
 - b. To allay the fears of minorities in Nigeria
 - c. To amalgamate Northern and Southern Nigeria.
 - d. To make Lagos a British colony
7. Into how many local government areas is Nigeria officially delineated?
 - a. 654 (b) 650 (c) 820 (d) 774
8. Laws made by State government are known as
 - a. Edicts (b) Bye law (c) Acts (d) Decrease
9. The centenary anniversary of the amalgamation of Northern and southern Nigeria will be celebrated in
 - a) 2060 (b) 2063 (c) 2014 (d) 2007
10. Which of these men introduced indirect rule in Nigeria?
 - a. Mungo Park b. Dr. Nnamdi Azikiwe c. Lord Lugard d. Sir James Robertson
11. Politics is an act for
 - a. Man to govern himself
 - b. Man to create government
 - c. States to control its destiny
 - d. Man to determine others
12. A major issue that distinguishes pressure groups from political parties is
 - a) Membership (b) objective (c) voting patterns (d) ideology
13. A nation consists of people with
 - a. Common history
 - b. Common ancestry
 - c. A shared set of values

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- d. A,B, and C above
14. A totalitarian state is based on
- Multi-party system
 - Total protection of civic rights
 - The totality of the state processes
 - Coercion as the instrument of government
15. A political concept that defines the beliefs, attitudes and values of a society is called
- Political socialization
 - Political culture
 - Political transformation
 - Referendum
16. The agent of political socialization generally regarded as the most important is
- Family
 - Peer group
 - school
 - Churches and Mosques
17. A political ideology that defines a system of societal organization in which the state control the commanding heights of the economy is called
- totalitarianism
 - communalism
 - socialism
 - communism
18. In which of the following countries is governmental powers most fused?
- Nigeria
 - United states of America
 - France
 - Canada
19. The benefits of separation of powers include the following except
20. Which of the following best describes French colonial policy in Africa?
- policy of association
 - policy of casus belli
 - policy of hostility
 - policy assimilation
21. The electorate is generally understood to refer to:
- elected members of the national assembly
 - elected members of the state houses of assembly
 - candidates who can contest elections
 - those citizens qualified to vote at elections
22. In a parliamentary system of government, the function of the head of state and the head of government are vested in
- the inner cabinet
 - an individual
 - two different individuals
 - the ministerial council
23. In a modern democracy, the ultimate source of sovereignty is the
- legislature and executive
 - judiciary
 - ruling political party
 - people

EXPLANATION TO ANSWERS

1. OAU summit in Kampala general Gowon was in organization of African unity now was know as African union in 1975 when he was toppled at home by General Murtala Mohammed. (A)
2. SDP was created by general Babangida's regime. The other parties UPN, GNPP, and NPN participated in the 1979 elections. (C) 3. (B)
4. In actual fact, at that time there was nothing like Nigeria. In the east, it was by war, in the North, It was by negotiation. In the west, it was party war and by bargaining. British came in through the Atlantic Ocean. (D)
5. The Privy Council in London was the highest judicial organ for Nigeria until when Nigeria became republic in 1963 (D)
6. 1954 Constitution introduced full fledges Federal Structure in Nigeria. This exposes the fear of minority. To allay this fear Henry Willink constitution had to set up in 1957. (B)
7. Nigeria since 1996 has been officially delineated into 774 local government area. (D)

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8. While federal and local government law are referred to as a decree and bye – law respectively the state law is referred to as edicts. (A)
9. The Centenary of amalgamation of Northern and Southern Nigeria will be in 2014 when it becomes 100 years. (C)
10. Lord Lugard introduced indirect rule in Nigeria first in Northern area until it spread to the South. (C)
11. Politics take place when people are selecting their representatives that will govern them. (A)
12. The objective of political parties is to win all election and gain control of government but the objective of pressure group is to influence the government to the benefit of her member. (B)
13. A nation is consist of people that combine all this elements: common history, common ancestry, language and any other shared values like Somali (D)
15. (C) A totalitarian state is where state is supreme totally to any other body = All other
16. (B) Political culture as a concept that defines the belief, attitudes and values of a society.
17. Family the most important agent of socialization has been immediate family for a person to learn a lot from home (A)
18. In socialism unlike capitalism, a state controls the commanding heights of the economy (C)
19. Government power is fused under presidential system of government. Although Nigeria and USA practice presidential system of government but USA practice more organized presidential system. (B)
20. One of the advantages of separation of power is to prevent the excessive power of any arm of government particularly the executive (A)
21. The French Colonial policy in Africa could best be described as assimilation – which tend to change African of French in every ramification – but latter change to association policy – which is based on French African relation without converting African to French completely. (D)
22. Electorate is those citizens qualified to vote at elections (D)
23. The head of state can be referred to as ceremonial president while the prime minister is the head of government (C)
24. The source of sovereignty in the democratic state are people (D)

UNIVERSITY OF JOS 2007 POST UME TEST

CURRENT AFFAIRS

1. Democracy was first practiced in (a). Ghana (b). United state of America (c). Greece (d) Britain
2. Which of these countries has the highest population in West Africa? (a). Mauritius (b) Ghana (c) The Gambia (d) Nigeria
3. This African ruler resisted colonial rule and was later exiled by the colonial officials a. Alaafin of Oyo (b) Oba of Benin (c) King Jaja of Opopo (d) Onisanbo of Ogbooro
4. The following countries are settler colonies except a. Nigeria b. South Africa c. Angola d. Mozambique
5. Nigeria gained independence from colonial rule on a. October 1, 1960 b. November, 1963 c. May 29, 1999 d. November 1, 1960
6. All but one of the following is not a symbol of political culture

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- a. A national flag b. The government c. An anthem d. The constitution
7. All but one of these is not an agency of political socialization
 - a. The constitution b. The family c. Peer group d. Schools
8. All but one of these is not a tactic adopted by pressure groups in the pursuit of their objectives
 - a. Propaganda b. Lobbying c. Assault d. Boycott
9. The following are Anglophone west African countries except
 - a. Ghana b. Nigeria c. Kenya d. The Gambia
10. A Nigerian who has been the secretary of the commonwealth of nations organization is
 - a. Dr. Ibrahim Gambari
 - b. Professor Adebayo Adedeji
 - c. Chief Jaja Nwachukwu
 - d. Chief Emeka Anyaoku
11. How many countries are in Africa
 - a. Fifteen b. Fifty three c. Fifty d. Fifty five
12. Economic community of west African states (ECOWAS) was based on the initiative of the heads of states of these two countries
 - a. Nigeria and Ghana b. Nigeria and Togo c. Senegal and Cote d'Ivoire d. B and C above
13. ECOWAS treaty was signed on
 - a. May 28, 1975 b. October 1, 1960 c. June 12, 1975 d. None of the above
14. In which city was the ECOWAS treaty signed
 - a. Lagos b. Banjul c. Accra d. Abuja
15. A capitalist state is based on
 - a. Religion b. Creating job opportunities c. Dictatorship d. Free trade
16. In politics, power is all of the following except
 - a. Capacity to affect the actions of others
 - b. Ability to make people do things they otherwise will not do
 - c. An object
 - d. It is part of a relationship
17. Every political system performs the following basic function except
 - a. Rule making b. Rule transformation c. Rule enforcement d. Rule adjudication
18. These are common forms of governments except
 - a. Federal b. Unitary c. Plural d. Confederal
19. In a federal system
 - a. The centre is weak
 - b. Plurality is abnormal
 - c. There is nothing like autonomous units
 - d. There is unity in diversity
20. The legislature performs the following functions except
 - a. Determines the general direction of public policies
 - b. Investigating and monitoring the activities of the officials of government
 - c. Exercises power of appointment of government officials
 - d. Enforcing the law
21. The independence constitution of 1960
 - a. Introduced bicameral legislature
 - b. Catered for the three regions of Nigeria
 - c. Provided for emergency powers
 - d. Provided for fundamental human rights

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22. Nigeria became a republic in
a. 1960 (b) 1961 (c) 1963 (d) 1914
23. The amalgamation of the northern and southern protectorates and the colony of Lagos was in
a. 1960 (b) 1966 (c) 1914 (d) 1957
24. Globalization is all but one of these
a. A renewed concept in international studies
b. Limited to the west
c. A process of making the world smaller
d. An increasing integration of the world

ANSWER KEY

1. C 6. B 11. D 16 C 21 C
2. A 7. A 12. B 17 B 22 C
3. C 8. C 13. A 18 C 23 C
4. A 9. C 14 A 19 D 24 B
5. A 10. D 15 D 20 D

EXPLANATION TO ANSWERS

1. Democracy is the system of people by the and for the people, government of simple majority. Democracy was originated from the city states of Greece. It came out of works of social philosophers like Thomas Hobbes, John Lock, J.Jean. Rousseau etc. (C)
2. Nigeria population is over 140million according to 2006 censures. It is about ¼ of African population. Thus in population Nigeria is the most populous African country (A)
3. (C)
4. Nigeria apartheid South Africa and the Portuguese colonial ruling in the Angola and Mozambique are described as settler because they were in total control of the territories including the resources. (A)
5. (A) Nigeria gained her independence from British colonial masters in October 1, 1960
6. (B)
7. Agency of political socializing ranges from the family, school, peer group, interest groups, media, political party etc (A)
8. The tactics adapted by the pressure group includes these: boycott, lobbying, propaganda, sponsor candidates in election etc apart from open assault. (C)
9. Anglophone West African countries are countries colonized by British Colonial Master in West Africa. They are just four: Nigeria, Ghana, Gambia, Sierra Leone, Kenya is in East Africa (C)
10. Chief Anyaoku was the secretary of the common wealth of nations organization to till 2007.
11. Africa countries are fifty five, although many states are still striving for independence uptill now. (D)
12. ECOWAS was the offshoot of the thought of Nazingbe Eyadema anf General Yakubu Gowon in 1975 and up till now both countries remain the most prominent in decision making in the organization. (B)
13. This treaty was signed at Lagos. (A)
14. Lagos ECOWAS treaty was signed in Lagos, Nigeria in 1975 (A)

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15. Capitalism economy system in which a country's trade and industry are controlled by private owners for profit rather than by the state. (D)
16. An object power is ability to make a person behave in the way you want. It calls for both persuasion and reward.
Power is a part of relationship and it central theme in politics ©
17. Rule transformation every political system performs the function of rule making, adjudication and execution (B)
18. Plural the forms of government includes, Federal Unitary and Confederal system Plural is not part of them (C)
19. There is unity in diversity federal system of government brings together diverse people with different ethnicity.
Unlike unitary system (D)
20. Enforcement of law. The legislature has primary functions which is rule making and other oversight functions but enforcing law falls within the jurisdiction of judiciary (D)
21. (C)
22. The essential element of 1963 constitution is that Nigeria became republic. This made Nigeria to be in full charge of their affairs (C)
23. Nigeria was amalgamated in 1914 by Lord Luggard . (c)
24. The key word by one of these means except one of these globalization has reduced world into global village. This is possible through explosion in information technology which integrates the world. (B)

UNIVERSITY OF JOS 2008 POST UME TEST

CURRENT AFFAIRS

1. Nigeria became a republic on
(a) May 29, 1999 (b) October 1, 1960 (c) January 1, 1966 (d) October, 1963
2. Which of the following is not one of the functions of the modern legislature?
a. Making laws
b. Collecting taxes
c. Ratification of treaties
d. Performing oversight functions
3. The French colonial policy of Assimilation was intended to
a. To transfer technology to Africa
b. To make Frenchmen out of Africans
c. To produce well educated Africans
d. To prepare Africans for the Olympic games
4. One of these is not a characteristic of the state
a. Selection of political leaders
b. A written constitution
c. Monopoly of the legitimate use of armed force
d. Sovereignty
5. The economic community of West African states was established in
a. May 1975 (b) May 1963 (c) May 1966 (d) May 1996
6. The European union (EU) is an
a. Economic organization
b. Association of former British colonies
c. Organization of European states

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- d. Union of European organization
7. What was the name of the highest ruling body during General Babangida's rule?
- The presidency
 - Armed forces ruling council
 - The National council of states
 - The federal executive council
8. One of the following is not a specialized agency of the United Nations organization
- Security council
 - International labour organization
 - World health Organization
 - UNESCO
9. Under which of the following conditions can a Nigeria be deprived of his or her citizenship?
- If married to a foreign national
 - If one holds a dual citizenship
 - If convicted of Armed robbery
 - If one buses the National flag
10. The government of one of the following countries operates an unwritten constitution
- The United States
 - The Union of Soviet Socialist Republics
 - Post - apartheid South Africa
 - The United Kingdom
11. The oldest written constitution is
- American Constitution
 - British Constitution
 - German Constitution
 - Roman constitution
12. The first indigenous Governor – General of Nigeria is
- Donald Cameron
 - Sir Ames Robertson
 - Sir Adesoji Aderemi (the Oni of Ife)
 - Rt. Hon. Nnamdi Azikwe
13. The Action Group crisis was in which year?
- 1966
 - 1962
 - 1963
 - 1965
14. Free education was introduced in west region by which of these premiers? Chief
- Obafemi Awolowo
 - Chief S.L. Akintola
 - Chief Micheal Adekunle Ajasin
 - Chief Bola ge
15. What does NEC stand for?
- Independent National Election Committee
 - Independent Newspapers Executive Committee
 - Independent National Export Council
 - Independent national Electoral Commission
16. The EFCC was established to
- Arrest and try corrupt politicians
 - Combat economic and financial crimes in Nigeria
 - Arrest, detain and prosecute corrupt state governors and legislators
 - Assist the World Bank in monitoring economic projects in Nigeria
17. The four British colonial territories in West Africa were

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- a. Senegal, Ghana, Sierra Leone and Nigeria
 - b. Nigeria, Ghana, Togo and Gambia
 - c. Nigeria, Ghana, Sierra Leone and Gambia
 - d. Gambia, Guinea, Ghana and Gabon
18. In many countries, citizenship can be acquired through the following processes except
- a. Nationalization b. Naturalization c. Registration d. Birth
19. Which of the following does not describe a party system ?
- a. One dominant party system
 - b. Two party system
 - c. Three party system
 - d. Multi party system
20. Which of the following is not a feature of Nigeria's electoral system?
- a. Direct election
 - b. Proportional representation
 - c. General election d. Secret ballot
21. Laws made by local government are called
- a. Acts of Parliament
 - b. Local Government Acts
 - c. Bye—Laws
 - d. Local Government Decrees
22. In the pre — colonial era, which of the following was not a feature of the emirate administration?
- a. Madawakin b. Waziri c. Sarkin Dogari d. Sarkin Emir
23. Federalism was introduced in Nigeria by the
- a. Lyttleton Constitution
 - b. Clifford Constitution
 - c. Macpherson Constitution
 - d. 1999 Constitution
24. ECOMOG was set up primarily to
- a. Drive away the European from West Africa
 - b. Serve as a Peace keeping Force for ECOWAS
 - c. Help Nigeria to control Africa
 - d. Promote rapid economic development among ECO WAS members
25. _____ The principles that have guided Nigeria's foreign policy since independence include the following except
- a. Peaceful coexistence
 - b. Legal equality of states
 - c. Political dependence
 - d. Non - alignment
26. The body charged with the trial of persons accused of crimes against humanity is
- a. Criminal Court of Justice b. International Criminal Court c. International Court of Justice d. ICPC
27. The independence of the Judiciary can be enhanced by the following except
- a. When judges hold office for a fixed term
 - b. When judges cannot be removed from office even when they commit crimes
 - c. Appointment of judges by an independent body
 - d. Political neutrality of judges

ANSWER KEY

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- 1.D 8. A 15.D 22.D 2.B 9. B
16.B 23.A 3.B 10.D 17.C 24.B
4.B 11.A 18.A 25.C 5.A 12.D
19.C 26.B 6.C 14.A 21.C 27.B
7. B

EXPLANATION TO THE ANSWERS

1. (October 1 1963) this is the year Nigeria took charge of their affair fully (D)
2. (Collecting tax) Legislative makes law and perform other oversight functions but minister which is executive arms collect tax (B)
3. (Making French men out of Africans is what assimilation policy of French colonial tended toward until it was changed to Policy of association) (B)
4. (A written constitution) state must have government, sovereignty etc and must have (B)
5. (ECOWAS) was established by Gen Yakubu Gowon and Nazingbe Eyadema in May 1975. (A)
6. (EU) is organization of European states (C)
7. (B) (Armed Forces ruling Council became highest ruling body during General Babangida's rule)
8. Security council is one of the main organs but not specialized agency of UNO (A)
9. If one holds a dual citizenship (B)
10. The United Kingdom operates unwritten constitution (D)
11. The oldest written constitution is that of America. It was dated back to 1779 (A)
12. Hon. Nnamdi Azikwe became the Governor General in 1960 representing the Queen in Nigeria until 1963. (D)
13. The Action Group crisis took place in 1962 in the Western Region. (B)
14. Chief Obafemi Awolowo, then Premier of Western Region introduced free education in the region (A)
15. INEC = Independent National Electoral Commission (D)
16. EFCC was established to combat Economic and Financial Crimes in Nigeria (B)
17. Nigeria, Ghana, Sierra Leone and Gambia are the first British colonial territories in West Africa. (C)
18. Citizenship can acquired by birth, registration but not by naturalization (A)
19. We can have a party, two parties and multi party system but not three party system (C)
20. Proportional representation is not a function of Nigeria's electoral system (B)
21. (C) Laws made by Local Government are called Bye Law; the state is edict while federal is called decree
22. There was nothing like Sarkin Emir but we have Emir, Sarkin Fada, Dogari Waziri etc. (D)
23. Lyttleton Constitution of 1954 introduced full fledged federalism system in Nigeria. (A)
24. ECOMOG was set up primarily to serve peace keeping operations for ECOWAS. (B)
25. Political dependence is not of the principles that guided Nigeria's Foreign policy since independence. (C)
26. International Criminal Court is a body charged with the trial of Persons accused of crimes against humanity in this world. (B)
27. Independence of judiciary can be enhanced by being politically neutral, have a fixed term of office and appointed by an independent body. (B)

UNIVERSITY OF JOS 2009 POST UME TEST

CURRENT AFFAIRS

1. Traditional rulers were restricted to ceremonial rules by the local government reforms of

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- a. 1966 b. 1976 c. 1984 d. 1987
2. A parliamentary system, who ensures that members are in the house to vote on major issues
 - a. Party leaders
 - b. Speaker of the House
 - c. Clerk of the House
 - d. Whip
3. A system in which no single person serves as the chief executive is known as
 - a. Republican b. Revolutionary c. Collegial d. Parliamentary
4. A social system in which power is derived from control over land is called
 - a. Oligarchy b. Feudalism c. Socialism d. Welfarism
5. "Rule of Law" refers to situation in which
 - a. Lawyers are the rulers
 - b. Laws are supreme
 - c. The judiciary is independent
 - d. Parliament makes laws
6. An important principle of the civil service is
 - a. Authoritarianism b. Anonymity c. Nepotism d. Partisanship
7. Which of these constitution recognized local government as the third tier of government?
 - a. The 1946 Constitution
 - b. The 1960 constitution
 - c. The 1963 constitution
 - d. the 1979 constitution
8. A condition for judicial independence is the appointment of judges by the
 - a. Civil service commission
 - b. Judicial service Commission
 - c. Low Review Commission
 - d. The 1979 constitution
9. The minorities Commission appointed in Nigeria in 1957 recommend that
 - a. More states should be created in the federation
 - b. No more states should created before independence
 - c. Nigeria should revert to a unitary structure
 - d. the legislature should Legislate for the minority areas
 - e. the minorities should constitute one state
10. The second military coup deta't in Nigeria took place on
 - a January 15, 1966 b. October 1, 1966 c. July 29, 1966 d. July 29, 1975 e. February 13, 1976
11. One of these was in existence before the outbreak of the second world war
 - a. The OAU b. The League of Nations
 - c. The UNO
 - d. The Commonwealth of Nations
 - e. ECOWAS
12. An important advantage of creating more constitution in a federal state is to
 - a. Enhance the People's participation
 - b. Enable ambitious Politicians gain political power
 - c. Make the states gain more power from the federal government
 - d. Curb the excess of the federal government
13. Under the Presidential system
 - a. The party with the majority of seat forms the Executive
 - b. There is the principle of collective responsibility
 - c. The president may come from any of the parties

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- d. The states take instruction from the federal government
14. Public opinion is important because it
- Tells government what action it must take
 - Lets government know what the people want
 - Allows Police to manage crisis
 - Mothers the minorities in resource lean areas
 - Guarantees people's freedom and rights
15. Bicameral legislature exists
- Where two cameras are used to monitor court proceedings
 - To prevent the concentration of power on legislative house
 - To provide jobs for more politicians
 - To ensure that just laws are passed
16. Africans were first elected to the legislative council in British West Africa in
- Ghana
 - Sierra Leone
 - The Gambia
 - Nigeria
17. One of the functions of the Ministry of external affairs is the
- Deportation of illegal aliens
 - Issuance of Passports
 - Defence of the Country's Borders
 - Promotion of national interests
18. The leader of the Northern People's congress was
- Yakubu Maitama Sule
 - AbubakarTafawa Balewa
 - Aminu Kano
 - Ahmadu Bello
19. The idea of democracy started with the
- Romans
 - Pensions
 - Egyptians
20. In the Marxist theory, those who live by selling their labour are called
- Bourgeoisie
 - Proletariats
 - Feudal lords
 - Slaves
21. Which of the following is NOT an acceptable means of achieving democracy?
- Referendum
 - Recall
 - Initiative
 - Riots
- 22 The branch of government responsible for implementing laws is the
- Executives
 - Legislature
 - Police
23. In a democracy, sovereignty is vested in
- The community
 - Public officials
 - Judges
 - The head of State
 - The Legislature
24. Universal Adult Suffrage means all
- Adult citizens can vote
 - Citizens vote
 - Qualified citizens can vote
 - Literate citizens can vote
 - Adult males can vote
25. A bill that applies to the whole population and is intended to promote the general welfare is called
- A private bill
 - A decree
 - An Appropriation bill
 - A public deal
 - An edict

ANSWER KEY

1. B 6.B 11.B 16.A 21D

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2. D 7.D 12.A 17. D 22.A
3. D 8.B 13.C 18. D 23.A
4. B 9.A 14.B 19. C 24.C
5. B 10. C 15.B 20. B 25C

EXPLANATION TO ANSWER

1. (B) 1976 — Local government reforms change the multiple system of local government to a single tier all purpose local government and the traditional rulers were restricted to ceremonial rules
2. (D) The chief whip sees to the activities of the parliament, he monitors any voting activity within the house
3. (D) Parliamentary system of government is that in which the head of state is distinct from the head of government.
Both offices and functions attached to two individuals
4. (B) Feudalism can be expressed as the identification of landed property with sovereignty, sovereignty over a parcel of land which becomes a private hereditary possession and asset to the family.
5. (B) The rule of law can be expressed as the supremacy of law over everybody in a political system.
6. (B) Civil servants are non-partisan and are anonymous and loyal to each government of day. A civil servant is not expected to address press unless allowed to do so by the minister.
7. (B) 1979 constitution made provision for a democratically truly elected local government councils. It also listed the functions of the council.
8. (B) Judicial service Commission is a body that sees to the appointment, remuneration, promotion and discipline of judiciary.
9. (A) Henry Willink's Commission, the minority commission of 1957 was a commission of inquiry that look into the fears of the minority in the country and one of its recommendations was the creation of more states.
10. This is the coup that eliminated the former head of state, Gen. Aguyi Ironsi. The coup was executed in Ibadan and enthroned Gen. Yakubu Gowon on the 29th of July, 1966.
11. (B) The league of Nations was formed in 1919, after the first World War of 1914, after UNO was established. The League of Nations was established to stop the outbreak of another war but it could not serve this purpose.
12. (A) People are encouraged to take part in politics, as we have in house of Representatives in Nigeria which is based on the population of the state and the essence is to enhance people's participation in government.
13. (C) In federal system, instruction is taken from constitution and any political party can produce president under Presidential System.
14. (B) Public opinion may be defined as the belief, values and attitudes, which are commonly held and expressed by the minority of the people on a given public issue.

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Public opinion helps the government to know the feeling of the people concerning its policies and activities.

15. (B) Bicameral legislature is act of carrying out legislative functions by two chambers in a country. They are lower chamber and upper chamber. This prevent the concentration of power on a single legislative arm.

16. (A) In 1920, the national congress of British West-Africa (NCBWA) was formed in Accra, Gold Coast (Ghana).

Joseph Leseey and Dr. Akinwande Savage of Nigeria were instrumental to its formation.

17. (D) Ministry of External Affairs champion the foreign policy of Nigeria. Foreign policy refers to the decision and actively taken by a state to pursue her interests within the global system.

18. (D) Ahmadu Bello was the founder and leader of Northern Peoples Congress. He consolidated the party in the northern part of Nigeria. He was assassinated in January 15, 1966. He was the Sarkuna of Sokoto and Premier of Northern Region.

19. (C) Democracy originated from Greece.

20. (B) Bourgeois are the ones that pay for the services. The proletarians are the people that labour to earn their means in the capitalist society.

21. (D) Riot is a situation in which a group of people behave in a violent way in public place, often as a protest, this do not promote democracy.

22. (A) Legislators make law, the executive implement it, the judiciary interpret while the police enforce.

23. (A) In democracy, sovereignty is rested on the people (community). In sovereignty, the power is rested on the hand of the people.

24. (C) Universal Adult Suffrage means not all citizens can vote like in Nigeria, people above 18 years of age are allowed to vote.

25. (C) Appropriation bill is the act of giving a sum of money to be used for a particular purpose. For example, passage of Budget at the National Assembly.

UNIVERSITY OF JOS 2010 POST UME TEST

CURRENT AFFAIRS

1. The Ayoob Khan constitution was designed to last for;

a. Nine years b. Five years c. Twelve years d. Six years

2. Under the 1963 Republican Constitution, the President exercised:

a. Judicial powers b. Executive powers c. Nominal powers d. Concurrent powers

3. The Clifford constitution was notable for

a. Amalgamating the Northern and Southern provinces

b. Introducing indirect rule

c. Establishing the legislative council

d. Creating a Northern majority in the legislative council

4. In a federal constitution, legislative powers that are shared by two levels of government are referred to as

a. Exclusive b. Extra-ordinary c. Residual d. Concurrent

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5. During the period of 1960-1966, Nigeria was governed under the:
 - a. Presidential system of government
 - b. Westminster system of government
 - c. Confederal system of government
 - d. Unitary system of government
6. Which of the following in the Sokoto Caliphate performed functions similar to that of the Bashorun in Oyo kingdom?
 - a. Waziri
 - b. Galadima
 - c. Ma'aji
 - d. Alkali
7. In the Igbo political system, the most senior member of the council of elders is the
 - a. Okpara
 - b. Obi
 - c. Eze
 - d. Ofo
8. A non-monarchical state can best be described as a:
 - a. Republic
 - b. Confederation
 - c. Nation
 - d. Federation
9. Proportional representation favours
 - a. Multi-party system
 - b. Three-party system
 - c. Two-party system
 - d. One-party system
10. One major factor that differentiates the presidential from the parliamentary system is:
 - a. Separation of powers
 - b. judicial independence
 - c. Passage of bills
 - d. Party system
11. A state with a hegemonic party is one in which:
 - a. There is one dominant party
 - b. There is no opposition party
 - c. There is only one party
 - d. Other parties are officially recognized.
12. In the First Republic, politics in Northern Nigeria was dominated by
 - a. NEPU
 - b. UMBC
 - c. NCNC
 - d. NPC
13. The creation of classless society is the ultimate aim of
 - a. Communism
 - b. Socialism
 - c. Fascism
 - d. capitalism
14. Herbert Macaulay was the first President of
 - a. NCNC
 - b. AG
 - c. UMBC
 - d. NEPU
15. A special election organized to decide on a political issue is known as
 - a. Plebiscite
 - b. By election
 - c. General election
 - d. Primary election
16. Equality before the law is a component of
 - a. Separation of powers
 - b. Checks and balances
 - c. The rule of law
 - d. Constitutional law
17. In the process of implementing laws, the executive sometimes performs
 - a. Judicial functions
 - b. Bureaucratic function
 - c. Oversight function
 - d. Legislative function
18. Which of these was the main organ of the defunct OAU?
 - a. The Liberation Committee
 - b. The Council of Ministers
 - c. The Commission for Mediation, Conciliation and Arbitration
 - d. The Assembly of Heads of State and Government
19. Nigeria hosts of the Commonwealth Conference which eventually led to the Independence of
 - a. Mozambique
 - b. Namibia
 - c. Zimbabwe
 - d. Malawi
20. Multilateralism in Nigeria's foreign policy entails
 - a. Africa being the centre piece of Nigeria's foreign policy
 - b. Non-aligned posture in international affairs

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- c. Quest for a permanent membership of the UN security council
 - d. Membership of international organization
21. The ancient Greeks practiced
- a. Direct democracy
 - b. Representative democracy
 - c. Liberal democracy
 - d. Benevolent dictatorships
22. Fascism originated from:
- a. Greece b. Italy c. China d. Germany
23. According to Karl Marx, the mode of production that precede Capitalism is
- a. Mercantilism b. Feudalism c. Socialism d. Communalism
24. One of the destructive features of a democracy is that it
- a. connotes civil rule
 - b. facilitates popular participation
 - c. Provides for a unicameral legislature
 - d. Is not associated with one party state
25. Serfs are the dominated class under:
- e. Capitalism b. Socialism c. Fascism d. feudalism

ANSWER KEY

- 1. A 6.A 11.A 16.C 21.A
- 2. C 7. D 12. D 17. C 22. B
- 3. C 8. A 13.A 18.D 23.B
- 4. D 9. A 14.A 19- 24.B
- 5.A 10.A 15.A 20.D 25.D

EXPLANATION TO ANSWERS

- 1. (A) Arthur Richards Constitution of 1946 was designed to last for nine (9) years but lasted for five(5) years and ended in 1951.
- 2. (C) Nominal power, is just ceremonial power under parliamentary system of government. There is also fusion of power.
- 3. (C) Clifford constitution was made in 1952. The major reason was the creation of legislative council and led to the creation of political parties in Nigeria. Herbert Macaulay was the first person to establish political party in Nigeria.
- 4. (D) In federal constitution, concurrent legislative power is shared between the state and federal (control) government, as we have in education, resources, industrial development, roads, insurance, security (police) and also sharing of money. In residual, state government are allowed to make law as we have in establishment of traditional council.
- 5. (A) Westminster is the same as parliamentary.
- 6. (A) The administration of Oyo empire involved the Alafin, assisted by the Aremo, the Bashorun, Oyomesi and others. The Bashorun (Prime Minister) and Oyomesi played a very key role in the administration while Waziri was a very senior adviser and administrator. He was the prime minister in Sokoto Caliphate, Galadima was in charge of the

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capital, Maazi was in charge of treasury.

7. (D) Ofo title holder made the council of elders. Each family head held the Ofo title and all of them put together formed the Council of Elders

8. (A) A non-monarchical system is republican. Republican system is where everybody is equal and have equal right to vote for their leaders. In monarchical, the king are from selected family.

9. (A) Multi-party system

10. (A) In parliamentary system, some members of legislature are also members of executive but under presidential system, there is total separation of power.

11. (A) Hegemonic party, as in USA where Republican and Democrats are dominant in Nigeria, PDP is the dominant party.

12. (D) In Nigeria, First Republic (1963— 1966) NPC, NCNC and AG were the prominent political parties that contested elections. Northern Nigeria, was dominated by NPC. The AG in southwest and NCNC in South East.

13. (A) Karl Marx called communism classless society, where everybody will be equal.

14. (A) Herbert Macaulay was the founder and first president of National Citizen of Nigeria and Cameroun (NCNC) and later quit while Nnamdi Azikiwe took over.

15. (A) Plebiscite is also a 'yes or no" vote of the people especially when issues of national importance referred to them. It can also be in some relevant public or political question like the issues of minorities in a political set up.

16. (C) The rule of law is defined as the supremacy of law over everybody in a political system. Rule of law is seen as a provision made by the constitution with emphasis on supremacy of the law, equality before the law and the presence or inclusion of the principle of individual rights.

17. (C) In the process of implementing laws, the executive sometimes perform a lot of functions like legislative function and can be called oversight function (C)

18. OAU was founded on May 25, 1963 at Addis-Ababa, Ethiopia. Thirty (30) independent African state attended the inaugural meeting. The assembly of state and government is the highest and most powerful of all the organs of the organization. (D)

19. -

20. (D) Multi-lateralism is the policy of trying to make multiple agreements, that is multiple agreement with many countries.

21 (A) Democracy (direct) was defined as the government of the people, for the people and the population was still small. Now we have indirect democracy, where we have representation government or government of the majority.

22. (B) Fascism is a form of government headed by a dictator, in which government has a total control over all

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activities in the state and people are denied personal liberties as it originated from Italy under Benito Mussolini.

23. (B) According to Karl Marx, mode of production started from communalism, next is socialism and finally to communism.

24. (B) Democracy is a form of government in which the people exercise their governing power either directly or through representation, periodically elected by them. This informs us that democracy provides institution for expression and supremacy of people.

25. (D) The Serf (tenants) pay their landlords annual tribute in money or kind. They are the owner of labour in the feudalism system.

UNIVERSITY OF JOS 2006 POST- UME TEST ECONOMICS

1. The only essential attribute of a good currency is a) Scarcity b) Homogeneity (c) Acceptability d) Cognizability

2. What happens to a supply curve when the variables (s) that are normally held constant are allowed to change?

- a. the curve flattens out
- b. there is a movement along the curve
- c. the curve shifts
- d. the curve becomes steeper

3. If the price of Pepsi decreases relative to the price of the coke and 7-up the demand for

- (a) Coke will decrease
- (b) 7-up will decrease
- (c) Coke and 7-up will increase
- (d) Coke and 7-up will decrease

4. Suppose wages paid by firm increase what would reasonably be expected to happen to the equilibrium price and equilibrium quantity for the firm's output?

- (a) Price increases; quantity decreases
- (b) Price decreases, quantity decreases
- (c) Price decrease, quantity increases
- (d) Price increases, quantity increases

5. The multiplier is always the reciprocal of a) MPC b) MPS c) APC d) APS

6. If the marginal Propensity to save is 0.4 and consumption expenditure changes by N10 million, the equilibrium level of income will change by

- a) N 15.0 million b) N 4.0million c) N 2.5 million d) N 25 million

7. Economic freedom is brought about by the existence of

- a) Government b) Money c) Availability of credit d) Choice

8. Which of the following is the best general definition of study of economics?

- a) The best way to invest in the stock market b) Business decision making under foreign competition c) Individual and social choice d) Inflation and unemployment in a growing economy

9. What implication does resources scarcity have for the satisfaction of wants?

- a) Not all wants can be satisfied
- b) We will never be faced with the need to make choices

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- c) We must develop ways to decrease our individual wants
 - d) The discovery of new resources
10. In economics, rational decision —making requires that:
- a) One's choices be arrived at logically and without error
 - b) One's choices be consistent with one's goal
 - c) One's choices never vary
 - d) One make choices that do not involve trade offs
11. A deficit budget is usually drawn up during
- a) Economic buoyancy
 - b) inflationary period (c) war time
 - d) economic recession
12. A drawer of a Cheque is the
- (a) Person who is to paid
 - b) bank on which the Cheque is drawn
 - c) person who write out the Cheque
 - d) bank officials who certifies the payment
13. The liability of a sole trader is
- a) Indeterminate b) Unlimited c) limited d)Transferable
14. Which of the following is regarded as fixed cost?
- a) Cost of raw materials b) labour wages c) rent on land d) cost of light
15. Which of the following is not a member of OPEC?
- a) Indonesia b) Iran c) Venezuela d) Egypt
16. The creation of utility can be referred to as
- a) value added b) profit marginalization c) production d) entrepreneurship
17. The production within the domestic territory of a country is called the
- a) Net national product
 - b) Gross domestic product
 - c) Disposable income
 - d) Gross national product
18. Suppose a consumer's income increases from N30, 000 to N36, 000. As a result, the consumer increases her purchases of compact discs (CDS) from 25 CDS to 30CDS. What is consumer's income elasticity of demand for CDS?
- a) 0.5 b)1.0 c)1.0 d) 1.5
19. When a nation's exports are greater than its import
- a) the net foreign trade is zero
 - b) an unfavorable balance of payments exists
 - c) a favorable balance of trade exist
 - d) a favorable balance of payment exists
20. Inflation is likely to benefit
- a) Persons with bank savings
 - b) persons who live on fixed pension funds
 - c) creditors
 - d) debtors
21. For which market model is there a very large number of firms'?
- a) Monopolistic market competition
 - b. Oligopoly c. pure monopoly
 - d. pure competition
22. Which of the following is an economic cost?

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- a. uninsurable risk
- b. normal profit c. economic profit
- d. monopoly profit

23. Which tends to be a progressive tax in Nigeria? A. Income tax b. property tax c. sales tax d. import tax

ANSWER KEY

- 1. C 6. C 11. D 16. C 21. A
- 2. C 7. B 12. A 17. B 22. A 3. D
- 8. C 13 B 18 C 23. A 4. - 9. A
- 14. C 19. C 15. A 20. D

EXPLANATION TO ANSWERS

- 1 A good money must be generally accepted as a means of exchange. (C)
- 2. A change in fixed factors leads to a change in intercept from Q_0 to Q_0 and consequently a shift in curve (C)
- 3 They are all substitute goods. If the price one substitute goods decrease, the demand for other substitute goods will decrease. (D)
- 4 An increase in wage paid will lead to increase in cost of production which invariable leads to shift in supply curve to left. Therefore, the price will increase and as a result of that the quantity demanded will fall. 5. $1 = 1 - mpc$ mps, Therefore the multiplier is reciprocal of mps. (B)
- 6. $1 \times N10m$ MPs
- $1 \times 10 = N2.5m$ (C) 0.4
- 7 It is through money that an effective choice can be made. (C)
- 8. Economics is studied in order to educate the individual and country at large on how to make choice base on existence of scarcity of resources to satisfy human wants. (C)
- 9. It means that not all wants can be satisfied, that is why an economist needs to make choice of the wants to be satisfied. (A)
- 10 Rational decision making in economics means that choices must be made base on wants to be satisfied. (B)
- 11 Deficit budget is drawn up during deflationary period so as to sustain the economy of a nation. (D)
- 12 A drawer is a person who is authorized to be paid by the bank. (A)
- 13 The liability of a sole trader is unlimited because if the sole trader business folds up, the owner will loose his/her capital including personal property to pay up outstanding debt.(B)
- 14. Fixed cost is' the expenses on fixed asset which does not change due to increase in production over a period of time, except during the long run, where all factors of production are variable. (C)
- 15. Iran and Venezuela are major founding- members where Egypt and Syria joined later. Indonesia is not part. (A)
- 16 Production is the creation of utility. Production of goods and services are meant to satisfy human wants. (C)
- 17 Gross Domestic products is the total monetary value of goods and services produce in the country, by both citizens and foreigners, within a given period of time, usually a year. (B)

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18 Change in consumer income = N36,00

30,000=N6,000

% change in consumer income = $6,000 \times 100 = 16.7\%$

36,000 Change in consumer purchase = $30 - 25 = 5$ unit

%change in consumer purchase = $5 \times 100 = 20\%$

25 1 5

Income elasticity of demand = $20\% = 1.198$ $16.7\% = 1.2$ (C)

19 If the average export prices increase relatively to the average import prices, the terms of trade are favorable. (C)

20 It benefits the debtors because during the inflationary period the value of money will reduce in term of its

purchasing power. (D)

21 Monopolistic market competition is market structure characterized by numerous firms selling similar but

differentiated products.(A)

22 The real economic cost is opportunity cost which is risk or cost is forgone. (A)

23 Income tax is progressive because the higher you earn the higher tax you pay. (A)

UNIVERSITY OF JOS 2007 POST-UME TEST

ECONOMICS

1. Economics is founded on the principle that:

- Human wants are more than human needs
- materials things are more than human wants
- human want are limitless while the means to satisfy them are limited
- human needs are easy to define

2. The capitalist economic system is characterized by all the following except:

- Private ownership of the means of production
- equitable distribution of income and wealth
- Capital accumulation
- markets and prices coordinate economic activities

3. If the equation relating consumption (c) to income (Y) is $C = N7,500 + 0.2Y$ then a.

Consumption is inversely related to income b. consumption is the independent variable and income is the dependent

variable c. if income is f415,000, the consumption is N10,500 d. if consumption is N30,000, then income is N10,000

4. The reason for the law of demand can best be explained in terms of

- supply b. complementary goods c. the rationing function of prices d. diminishing marginal utility

5. The demand curve for the pure monopolist is

- perfectly price elastic b. perfectly price inelastic c. down sloping d. up sloping

6. Which of the following statement is correct? The Central Bank

- prints the country's currency
- handles the collection of debts owed to the government
- lands money to businessmen
- issues the country's currency

7. Which of the following is not a basic assumption underlying the theory of consumer behaviour

- consumers prefer more to less
- consumers are rational
- consumers are willing to make choices

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- d. consumers make consistent choices
- 8. The slope of the budget constraint
 - a. changes as the marginal rate of satisfaction changes
 - b. is the ratio of the prices of the two goods
 - c. is the ratio of the budget of total utility
 - d. equals one, since the consumer can buy combination along the budget constraint
- 9. Disposable income equals
 - a. personal income less business profit
 - b. personal income less taxes and subsidies
 - c. personal income less taxes plus subsidies
 - d. National income plus transfer payment
- 10. The 'term of trade' means
 - a. the trade agreement between two countries
 - b. the difference in the volumes of export of two countries
 - c. the value of a unit of export in relation to the value of a unit of import
 - d. none of the above
- 11. The burden of tax on a commodity whose demand is infinitely inelastic
 - a. is zero
 - b. will be borne by seller alone
 - c. will be borne by buyers alone
 - d. is impossible to tell
- 12. Inflation can be curbed by
 - a. increasing aggregate demand
 - b. paying higher wages
 - c. reducing aggregate demand
 - d. a deficit budget
- 13. The supply and demand for goods and services are influenced by the
 - a. Supermarkets b. Entrepreneurs
 - c. Mechanism of the law
 - d. Price mechanism
- 14. In a sole proprietorship, the decisions are made by the
 - a. Government
 - b. Board of Directors
 - c. Shareholder's conference
 - d. Owner
- 15. Which of the following are direct taxes?
 - A. income and company taxes
 - b. sales taxes c. commodity taxes
 - d. Excise duty
- 16. The production within the domestic territory of a country is called the
 - a. Net National Product
 - b. Gross Domestic Product
 - c. Disposable Income
 - d. Gross National Product
- 17. A producer sustains a loss in the short run if
 - a. marginal revenue is less than price
 - b. price is less than average cost
 - c. marginal cost is less than marginal revenue
 - d. average variable cost is less than average cost

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18. Money market differs from capital market in that it:
- deals with short-term loans while capital market deals with long term funds
 - deals with money only while capital market deals with capital as well
 - is limited in scope while capital market is not
 - uses interest rates while capital market does not
19. A production possibility curve shows:
- how much of the resources of society are used to produce a particular commodity
 - the rate of inflation
 - the rate of unemployment in the economy
 - the various combinations of two commodities that can be produced.
20. The situation in which the total amount of government spending exceeds total revenues is called a:
- balanced budget
 - budget deficit
 - budget surplus
 - fiscal surplus
21. The maximization of profit tends to be the driving force in the economic decision making of:
- entrepreneurs
 - workers
 - consumers
 - legislators
22. Which of the following equation is the correct one about Net National Product (NNP)?
- $NNP = \text{Gross National Product (GNP)} - \text{Depreciation}$
 - $NNP = \text{Gross National Product (GNP)} + \text{Net incomes from abroad}$
 - $NNP = \text{Gross Domestic Product (GDP)} - \text{Depreciation}$
 - $NNP = \text{Gross Domestic Product (GDP)} - \text{Net incomes from abroad}$
23. Middlemen in an economy perform the function of
- Protection
 - hoarding
 - distribution
 - exchange
24. Line E in the diagram below represents:
- total cost
 - Variable cost
 - average cost
 - fixed cost
2. B 7. A 12. C 17. B 22. A
3. C 8. B 13. D 18. A 23. C
4. C 9. C 14. D 19. D 24. D
5. A 10. C 15. A 20. B

EXPLANATIONS TO ANSWERS

1. The Economics as a subject was introduced purposely because of scarcity of resources to satisfy human wants. If all human want can be satisfied with available resources, there would be no need of introduction of economics as a subject.

In conclusion, Economics is founded on the principle that human want are limitless while the means to satisfy them are limited. Therefore, Economics as a subject teaches how limited resources can be rationed among unlimited wants. (C)

2. Capitalist economic system can be defined as a means by which individual has right to own means of production

e.g. land, capital, labour etc, and use it to their best interest.

Here, it means that those who have the capital and other means of production have the power to control economic

activities in the country. And it is not everyone in the country that has access to all means of production; therefore,

those who have will be wealthier than those who have not. In conclusion, there will be inequitable distribution of

income and wealth. (B)

3. If $C = N7, 500 + 0.27Y$

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If income (Y) = 15,000 what is the value of consumption (C)

Let substitute the value of income (Y) into consumption equation above.

$$C = N7,500 + 0.2(15,000)$$

$$C = N7,500 + 3000$$

$$C = N10,000 \text{ (C)}$$

4. The law of demand states that "The higher the price, the lower the quantity demanded and the lower the price, the higher the quantity demanded". The law dictates that the price dictates the amount of quantities that would be demanded by the consumers. (C).

From the above diagram, demand = average revenue.

The monopolist has right to control either the price or the quantity he wishes to sell. He can vary his price level as he wishes. (A)

6. The Central Bank is the government apex bank. It is the only bank that government has authorized to issue the country's currency. (D)

7. All consumers are rational in spending their income on commodities that will yield the same level of satisfaction to the money they have spent.

All consumers are willing to make choices on their choice of the commodities to be consume that will give them the

higher satisfaction the want, Since all our want unlimited; therefore, consumers make consistent choices. It is only

option (A) is not a basic assumption of the theory of consumer behaviour. (A).

From the budget constraint equation $M = P_1 X_1 + P_2 X_2$. The slope of the budget represent constraint $X_1 = \frac{M}{P_1} - \frac{P_2}{P_1} X_2$. It

means that M (income) is spent on the addition of $P_1 X_1$ (cost of commodity X. $P_1 X_1$) and the cost of commodity X_2 , i.e

$P_2 X_2$. It means that the income of the consumer is rationalized between the two commodities, the (B).

9 Disposable income = Personal income - Tax + Subsidies Disposable income is called take home after tax has been

deducted from the real income. (C)

10. Terms of trade can be defined as the rate at which a country's export exchange for import (C)

11. When the demand curve is infinitely elastic or perfectly elastic, output remains the same but the price increases by

the full amount of the tax. The consumer bears the burden of the tax, the commodity is essential commodities which

means that whether the consumer like it or not they must buy it and the commodity does not have close substitute.

(C)

12 Once inflation itself is defined as general rise in price of goods and services within a particular time. It is the excess

demand over supply that leads to inflation Therefore, answer is C.

13. It is the forces of demand and supply that dictate the level of price in the market for instance, if the price of the

commodity will increase while the quantity demanded will decrease. (D).

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14 Sole proprietorship is a one man business; therefore the decision is taken by the owner. (D)

15 Direct tax is compulsory levied imposed on income and profit of individual and companies.(A)

16 GDP is the total monetary values of goods and services produce within the country at a particular period of time.

Therefore the answer is Gross Domestic product (B)

From the diagram above price is less than average cost there by making the firm to sustain loss represented by the shaded portion. Answer is (B).

18 Money market is for short term loans while capital market is for long term loans.(A).

19 Production possibility by curve(PPC) is showing combination of commodities that can be produced with a given

factors of production e.g labour & Capital (D)

20. The question defines the government deficit

21. Entrepreneurs control all factors of production with purpose of making profit. The reward of entrepreneur is profit. (A)

22. Net National product is the total monetary value of goods and services produce within a particular year in a given country including net income from abroad less depreciation. (C)

23 Middlemen are the link between the producer and the consumer. They are performing the function of the distribution of goods to the final consumers. (C) budget.(B)

UNIVERSITY OF JOS 2008 POST- UME TEST

ECONOMICS

1. Which of the following best describes a perfectly inelastic demand function?

- a. the quantity demanded is insensitive to changes in price
- b. price is insensitive to changes in quantity demanded
- c. price and quantity demanded changes by some percentage
- d. the demand function is horizontal

2. Which of the following statement is true?

- a. a variable defined over a period of time is called a stock variable
- b. microeconomics analyses interaction in the economy as a whole
- c. a fall in the price of garri will shift its demand right ward
- d. the market demand curve for commodity will shift to the right if the price of its substitute falls.

3. Which of the following statement is false?

- a. Ends in Economics are the resources with which it can attain our goals
- b. Tables and graphs are focus of arithmetic technique used in economics to present ideas pictorially
- c. Three basic questions every economy must answer are what to produce, how to produce and for whom to produce.
- d. A and B. are substitutes if the supply of A increases, the price of B will tend to increase

4. Which of the following statement is false? a. An economy where economic decision making is shared by individuals

and government is known as mixed economy

- b. Given that apples and pears are substitutes, if the price of apples falls, the price of pears falls
- c. an elasticity of demand measured between two points on a demand curve is called a point elasticity of demand
- d.

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A and B are complements, if the supply of A decrease, the price of B will tend to fall

5. Which of the following statement is true?

a. if cross price elasticity of demand between two goods, A and B is negative, we can conclude that A and B are

substitutes

b. the co-efficient of elasticity of demand is measured as a ratio of change in quantity demanded to change in price c.

a market will be in disequilibrium when demand is not equal to supply d. all of the above

6. If the equation relating consumption (C) to income (Y) is $C = N7,500 + 0.2Y$, then

a. consumption is inversely related to income

b. consumption is the independent variable and income is the dependent variable

c. if income is N15,000, the consumption is N10,500

d. if consumption is N30,000, then income is N10,000

7. The reason for the law of demand can best be explained in terms of:

a. supply

b. complementary goods

c. the rationing function of prices

d. diminishing marginal utility

8. The demand curve for the pure monopolists is

a. perfectly price elastic

b. perfectly price inelastic

c. downsloping

d. upsloping

9. Which of the following statement is correct? The Central Bank

a. prints the country's currency

b. handles the collection of debts owed to the government

c. lends money to businessmen

d. issues the country's currency

10. Which of the following is not a basic assumption underlying the theory of consumer

behaviour a. consumers

prefer more to less b. consumers are rational c. consumers are willing to make choices d.

consumers make consistent

choices

11. Which of the following equations is the correct one about Net National Product (NNP?)

a. $NNP = \text{Gross National Product (GNP)}$

— Depreciation

b. $NNP = \text{Gross National Product (GNP)}$

— Net income from abroad

c. $NNP = \text{Gross Domestic Product (GDP) - Depreciation}$

d. $NNP = \text{Gross Domestic Product (GDP) -}$

Net incomes from abroad

12. Money market differs from capital market in that it

a. deals with short-term loans while capital market deals with long term funds

b. deals with money only while capital market deals with capital as well

c. is limited in scope while capital market does not

d. uses interest rates while capital market does not

13. A production possibility curve shows

a. how much of the resources of society are used to produce a particular commodity

b. the rate of inflation

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- c. the rate of unemployment in the economy
 - d. the various combinations of two commodities that can be produced
14. The situation in which the total amount of government spending exceeds total revenues is called a
- a. balanced budget
 - b. budget surplus
 - c. budget deficit
 - d. fiscal surplus
15. The maximization of profit tends to be the driving force in the economic decision making of:
- a. entrepreneurs
 - b. workers
 - c. consumers
 - d. legislators
16. Age distribution table
- The table above shows the age distribution of a town in Nigeria. What is the dependency ratio of the town?
- a. 3:2
 - b. 2:1
 - c. 5:2
 - d. 4:3
17. Which of these factors does not cause a change in demand?
- a. income
 - b. population
 - c. price of other commodities
 - d. price of the commodity itself
18. When the demand for a commodity is inelastic, total revenue will fall if
- a. price is increased
 - b. price remain constant
 - c. price is reduced
 - d. the commodity is a luxury
19. An economic system in which most capital goods are owned by individuals and private firms is known as
- a. planned economy
 - b. capitalist economy
 - c. mixed economy
 - d. socialist economy
20. Which of the following is the most liquid asset to commercial bank?
- a. cash
 - b. money at call
 - c. stocks and shares
 - d. Treasury Bills
21. At every point on an indifference curve, the
- a. Total Utility is decreasing
 - b. Level of Utility is constant
 - c. Level of Utility is increasing
 - d. Consumer is satisfied
22. Tax incidence is the analysis of
- a. How progressive a tax is
 - b. who ultimately pays the tax
 - c. How distorting a tax is
 - d. How a tax is collected
23. A monopolist will practice price discrimination in two markets if
- a. there is a patent of the commodity
 - b. there is free flow of information in the two markets
 - c. the markets have different elasticities of demand
 - d. the cost of separating the markets is low
24. Which of the following is regarded as fixed cost?
- a. Cost of raw materials
 - b. Labour wages
 - c. Rent on Land
 - d. cost of light

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25. Given that fixed cost is N500.00, variable cost is Ni, 500.00 and output is 40 units what will be the average cost of producing one unit?

a. N 2.50 b. N37.50 c. N50.00 d. N500.00

26. Which of the following does not hinder the efficient distribution of goods in West Africa?

- a. Government participation in the distributive trade
- b. inadequate storage facilities for agricultural goods
- c. inadequate credit facilities for potential distributors
- d. the tendency to hoard and smuggle

27. Which of the following is the most important reason why wages differ among occupations?

- a. Length and cost of training
- b. Supply of Labour
- c. Attractiveness of the job
- d. Influence of trade Unions

ANSWERS KEY

1. A 6. C 11. A 16.A 21 D 26. A

2. A 7.D 12 A 17. D 22 B 27 A

3 A 8C 13 D 18. C 23. C 4. B

9.D 14 C 19 B 24 C 5,A 10 A

15 A 20 A 25 C 6A

EXPLANATION TO ANSWERS

1. Change in price of the commodity from P1 to P2 has no effect on quantity demanded, as it remains at Q1 (A)

2. A variable that is defined relative to a particular period of time is a stock variable. For instance, National Income

for 2010. But, option B is wrong because it relates only to the individual economic agents, option C is also wrong a

fall in price does not shift its demand curve. Likewise option D is wrong because a fall in price of a substitute goods

will only shift the demand curve of a given commodity to the left.(A)

3. Our Ends are our goals and the resources to satisfy them are the means. Options B and C are absolutely correct but option D is ambiguous because, substitutability and complementarity of a commodity

does not affect its supply, conventionally.(A)

4. If the price of apple falls, the quantity of pear also fall. Option B is absolutely wrong because it describes arc

elasticity and not point elasticity. Option A is absolutely correct but options B and D are ambiguous. For B, because it

is conventionally assumed that the price of substitute goods is constant while varying the price of a particular good.

And for D, because of the same reason in option D in question 3 (B).

5. Option B & C are correct, but for option A, a negative cross elasticity indicates complimentary goods are not substitute goods.(A)

6. Options C is correct because if income is Ni 5000.

The consumption will be Ni 0500

That is, $C = 7500 + 0.2y$, $c = 7500 + 0.2(15000)$

$= 7500 + 3000$, $C = N1 0500$

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Option A is wrong because consumption is directly related to income. B is wrong because consumption is dependent while income is independent variable, and D is wrong because at Ni 0000 income, the consumption will be N 9500 and not N30000.(C)

7. Option D is right because the law of demand is derived from the axiom of DMU which relates that as more and more of a commodity is consumed the utility derived from additional amount is decreasing and the consumer will be ready to pay less for more quantity of the additional amount . other options are wrong.(D)

8. A monopolist is an imperfect market and is faced with a downward sloping demand curve. Other options are wrong.(C)

9. Question A B & option C are not correct because CBN does not deal directly with individual.(C)

10. Options A, B and D are correct because they relate to assumptions of Non-satiable, Rationality and constituency respectively. But option C is out of point because the consumers are forced to make choices since he cannot satisfy all his needs with the available resources.(A)

11. Only option A truly describe the NNP. The Net National Product(NNP) is achieved by deducting depreciation from the Gross National Product(GNP).(A)

12. Option A is correct because money market is the market for short term finance and capital is the market for long term finance.(A)

13. Because production possibility curve (PPC) shows the various combinations of two commodities that can be produced given the available resources.(D)

14. If Government Expenditure = Government Revenue=Balanced Budget
Expenditure<Revenue= Budget Surplus
Expenditure>Revenue=Budget Deficit

Hence, Option C is correct

15. Because profit maximization cannot attract workers, consumers or legislators but the entrepreneurs. The reward for entrepreneur is profit.(A)

16. The dependency ratio is the proportion of dependent population (i.e. children and aged) to the working population. In this case, $10000+2000 = 12000 = 3$ $3000+5000 8000 2 3:2$ (A)

17. A change in income, population or price of other commodities will always cause a shift in demand. Whereas only change in the price of the commodity can cause change in the quantity demanded. (D)

18. C The total revenue will fall if price is reduced because the qty demanded will not increase up to the rate at which the price is reduced.

19. B

20. A

21. D

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22. B

23. C

24. Fixed costs are cost on fixed asset. Rent on land is a good example.(C)

25. $AC=TC$ or $FC+V$ 500 }1500 = 0.Q0= N 50

Q 0 40 40

26. A

UNIVERSITY OF JOS 2009 POST UME TEST

ECONOMICS

- For two substitute goods, the gross elasticity of demand is
(a) greater than one but less than (b) zero (c) negative (d) positive (e) infinity
- If a person receives a higher wage than would be necessary to induce him to work, he is said to be receiving
(a) rent (b) profit (c) interest (d) gain (e) moratorium
- Which of this is likely to be inflationary
(a) tax increase (b) budget surplus (c) increase in unemployment (d) wage increase (e) increase in labour supply
- A characteristic of a debenture is that
(a) its yield is based on profits
(b) its yield is fixed rate of interest
(c) it has no redemption date
(d) there is a voting when interest is paid
(e) its interest is variable
- Which of these is not include in measuring national income by the income approach
(a) wages and salaries of public servants
(b) students bursaries and scholarship
(c) profit of international
(d) income of self employed person
(e) rents on property
- The revenue accruing to the seller of commodity X as a result of a fall in price will
(a) increase (b) fall (c) first fall but increase later (d) remain unchanged (e) change noticeably
- Deflation is persistence fall in price in the general level and is usually caused by
(a) a reduction in total demand
(b) an increase in government spending
(c) an increase in money supply to banks
(d) an increase in aggregate demand
(e) an increase in money supply relative to demand
- Under partnership, investors who have no desire to be actively involved on the daytoday management of such organizations are called
(a) stock brokers (b) sleeping partners (c) part-time investors (d) ordinary partners (e) debenture holders
- In a sole proprietorship, decisions are made by the
(a) government (b) board of directors (c) management (d) shareholders (e) owners
- A greater burden of taxes on essential goods is borne by the
(a) middle income group
(b) higher income group
(c) lower earning group
(d) people falling between the middle and higher income group
(e) top few richest people in an economy

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11. Demand as a factor of production is
 - (a) a composite demand
 - (b) a joint demand
 - (c) a derived demand
 - (d) an elasticity of demand
 - (e) cross elasticity of demand
12. One disadvantage of sole proprietorship is its
 - (a) limited liability (b) high profits (c) high sense of ownership d) low credit rating (e) low failure value
13. The monetary system that requires double coincidence of wants is known as
 - (a) the gold standard
 - (b) the uarter practice
 - (c) the commodity system
 - (d) the good exchange standard
 - (e) the Cheque system
14. The marginal theory of distribution makes an assertion that the price of any factor depends upon its marginal
 - (a) utility (b) productivity (c) rate of substitution (d) revenue (e) proceeds
15. By using exchange controls, a country tries to eliminate a balance of payments deficit by
 - (a) limited her imports to its currency of exports
 - (B) reducing the nation's domestic price level
 - (c) limiting her exports to its currency value of imports
 - (d) overvaluing the country's
 - (e) undervaluing the country's currency
16. Economies of scale operate only when
 - (a) marginal cost is falling with input
 - (b) average cost is falling with output fixed cost is variable
 - (c) fixed cost in variable (d) variable cost less than fixed cost
 - (e) variable cost is equal to cost of output
17. If an increase in income induces a reduction in the demand fro beans, beans can be referred to as
 - (a) a normal good (b) an inferior good (c) a substitute (d) a dash (e) a gifted good
18. Optimum population is desired because it enable an economy to attain maximum
 - (a) per capital income (b) per capital output (c) per capital real income (d) per capital revenue
 - (e) growth rate
19. Marginal cost curve intersects average cost cure
 - (a) from above at its lowest point
 - (b) from below before the lowest point
 - (c) from below at its lowest point
 - (d) from below after the lowest point
 - (e) at the zenith of turn
20. The concept of economics efficiency refers to
 - (a) obtained the maximum output from available resources at the lowest possible cost
 - (b) conservation of natural gas and oil deposits
 - (c) equity in the distribution of national resources
 - (d) production without waste
 - (e) the limited wants unlimited resources dilemma
21. A majorfactor affecting the value of money is the

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- (a) price level (b) banking habit (c) transaction motive (d) divisible nature of money (e) transferability
22. Which of the following is an example of invisible item on balance of payment account?
(a) shipping and aviation (b) import and export (c) merchandise (d) bullions (e) tariffs
23. The best index for international companies of standard of living is the
(a) cross national product (b) net national income (c) per capital income (d) cross national income
24. A major obstacle to economic development in many African countries
(a) a rise in industrial output
(b) low farm productivity
(c) free trade
(d) free interaction
(e) controlled international relations
25. The most popular adopted industrialization strategy in West Africa is
(a) import substitution
(b) export promotion
(c) ports development
(d) infant industries protection.

ANSWER KEY

- 1 D 6. C 11. C 16. C 21. A
2 E 7. A 12. D 17. B 22. A
3. D 8. B 13. B 18. B 23. C
4 B 9. E 14. B 19. C 24. B
5 B 10. C 15. A 20. A 25. B

EXPLANATION TO ANSWERS

1. The higher the price of commodity, A the higher the quantity Demanded of commodity B (A'.5 substitute). Hence the cross elasticity is positive.(D)
2. Moratorium is an inducement or grace received without actually working for it. (E)
3. An increase in wage will increase the purchasing power of consumers and invariably the aggregate demand, it will tend to increasing price level(inflation)if not matched with increase in production. (D)
4. Debenture is a loan to the company and it attract a fixed of interest as usual. (B)
5. Student bursaries and scholarships are transfer income which is excluded Natona income computation under income approach .(B)
6. If the price of a particular commodity is reduced quantity demanded will increase gradually and the total revenue will first fall and increase later. Ans C
7. Generally, fall in total demand will cause the price to fall, and t will fall persistently if not carefully checked . (A)
8. Sleeping partners are partners that contributes to the smooth running of the business but does not participate in the day-to-day activities of business. (B)
9. A sole proprietorship business is owned, managed, and financed by an individual owner, thus decisions are made by the owners.(E)
10. The lower earning group usually from the group of final consumers and all burden of tax are shifted on them. (C)

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11. Factors of production are demanded not for their own sake but for what they will be used to produced. Hence, it is a derived demand. (C)
12. The major disadvantage of sole proprietorship is limited capital expansion emanated From limited credit rating. (D)
13. Barter practice is the exchange system where goods and services are exchange directly. It involves double coincidence of wants. (B)
14. Thus, for profit to be maximized, marginal products of factors of production must equal to their prices. Hence $MP_l = w$ and $MP_k = r$. (B)
15. Deficit balance of payment (BOP) occur when imports are more than exports. Hence, will control it by limiting her imports to what can be financed by her currency of exports. (A)
16. Economics of scale only occurs in the long run when all factors of production are variable (C)
17. An inferior goods will have a negative income elasticity. (B)
- 18 An optimum population is a situation where available population can exploit available resources efficiently and per capital output is maximized. (B)
19. The minimum point of average cost(AC) is the efficiency point and the firm will break-only where the margined cost curve intersects average cost curve from below at its Lowers point. (C)
20. Since our want are unlimited and our resources limited in supply. Thus, economics seeks to obtain the maximum output firm available resources of the lowest possible cost.(A)
- 21 A persistence increase in general price level will cause inflation and reduce the value of money, and the reverse is correct for deflation. (A)
22. Invisible items are services transferred from one country to another. It includes shipping and aviation, tourism, education e.t.c. (A)
23. Per capita income is obtained by dividing the national income by the total population of a given country. It is used for international comparism of standard of living. (C)
24. Many African countries have shifted the domain of the economy from Agriculture to some other area, this has lead to a significant fall in Agric products which services as input for industrial development (B)
25. Most west African countries are usually combated with deficite balance of payment (BOPs), thus, they usually embark on export promotion strategy as their industrialization strategy. (B)

UNIVERSITY OF JOS 2010 POST UME TEST ECONOMICS

1. In economics, the pleasure, happiness or satisfaction received from product is called
a. Marginal cost b. rational out come c. status fulfillment d. utility
2. A person should consume more of something when it's marginal

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- a. benefit b. cost exceeds its marginal benefit d. benefit is still positive
3. Macroeconomics can best be described as the
- a. analysis of how a consumer tries to spend how a consumer tries to spend income
 - b. study of the large aggregates of the economy or the economy as a whole
 - c. analysis of how firms attempts to maximize their profits
 - d. study of how supply and demand determine prices in individual markets
4. When economists say that people act rationally in their self interest, they mean that individuals :
- a. Look for and pursued e opportunities to increase their utility
 - b. generally disregard the interest of other
 - c. are mainly creatures of habit
 - d. are unpredictable
5. As related to international trade dumping
- a. is a form of price discrimination illegal US antitrust law
 - b. is the practices selling goods in a general case for permanent tariffs'
 - d. is define d as selling more goods than allowed by an import quota
6. A nation's production possibilities curve is bowed out from the origin because
- a. wants virtually unlimited
 - b. The originator of idea drew it this way and modern economists follow this convention
 - c. resource are scarce
 - d. resources are not equally efficient in producing every goods
7. If the production possibilities curve were a straight down sloping line, this would suggest that
- a it is possible to produce more of both product
 - b. resources are equally capable of satisfying consumer want the two products have identical prices
8. Productive efficiency refers to
- a. the use of the least cost method of production
 - b. the population of the product-mix most wanted by society
 - c. the full employment of all available resource
 - d. production at some points inside of the production possibilities curve
9. Which of the following statement is correct?
- A. if demand increase, equilibrium price will fall.
 - B. if supply increase demand decreases, equilibrium price will fall.
 - C) If demand decreases and supply declines and demand remains constant, equilibrium price will fall.
- 10 If depreciation exceeds gross investment:
- a.) the economy's stock of capital may be either growing or shrinking.
 - B. the economy's stock of capital I growing.
 - c.) Net investment is Zero .
 - d) the economy's stock of capital is shrinking.
11. Assuming the total population is 100 million, the civilian labor force is 50 million, and 47 million workers are employed the unemployment rate is: (a) 3% (b) 6%. (c) 7%. (d) 5.3%.
- 12 Unemployment involving a mismatch of the skill of unemployed workers and the skill require for available jobs is called:
- (a) Frictional unemployment
 - (b) structure unemployment
 - (c) Cyclical unemployment

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(d) compositional unemployment

13. The greater is the marginal propensity to consume, the

(a) smaller is the marginal propensity to save

(b) Higher is the interest rate.

(c) Lower is the average propensity consumed.

(d) Lower is the price level.

14. Investment and saving are, respective;

(a) Income and wealth (b) Stocks and flows (c) Injection and leakages (d) Leakages and injections.

15. The amount by which government expenditures exceed revenues during a particular year is the;

(a) public debt (b) Budget deficit. (c) full employment. (d) GDP gap.

16. The value of money varies:

(a) inversely with the price level

(b) Directly with the volume of employment.

(c) Directly with the price level.

(d) Directly with interest rate.

17. If actual reserves in the banking system are #40,000 excess reserves are #10,000. And checkable deposit are

#240,000. then the legal reserve requirement is (a) 10%. (b) 12.5%. (c) 20% (d) 5%

18. The discount rate is the interest:

(a) rate at which the Central Bank of Nigeria lends to the Nigeria government.

(b) Yield on long-term government bonds.

(c) Rate at which the Central bank of Nigeria lend money to commercial Banks.

19. The basic formula for the price elasticity of demand coefficient is:

(a) Absolute decline in quantity demand/absolute increase in price

(b) Absolute decline in price / absolute increase in quantity demand

(c) % change in price / % change in price.

(d) change in quantity demand

20. If a firm can sell 30,000 units of products A at \$10 per units and 5,000 at \$8, then:

(a) the price elasticity demand 0.44.

(b) A is a complementary good.

(c) The price elasticity of demand is 2.25.

(d) A is a inferior good.

21. Assuming a household would consume #100 worth of goods and services per week if its weekly income were

Zero and would spend an additional #80 per week for each #100 additional income. If Q represents consumption and

Y income, the summarizes this relationship is

(a) $C = 80 + 1.00Y$. (b) $C = 1.00 \div 8Y$. (c) $C = 1.00 + 0.8Y$ (d) $C = 80 + 1.1Y$.

22 For a bicycle company, an economist predicted that other things being equal. a rise in consumer incomes will

increase the demand for bicycle, this prediction is based on the assumption that.

(a) There are many goods that are substitute for bicycle.

(b) there are many goods that are complementary to bicycle.

(c) there are few goods that are substitute for bicycle.

(d) Bicycle are normal goods.

23. A demand curve which is parallel to the horizontal axis:

(a) Perfect inelastic (b) Perfect elastic (c) relatively inelastic (d) relatively elastic.

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24. Allocation efficiency occurs only at that output where:

- (a) Marginal benefit exceeds marginal cost the greatest amount.
- (b) consumer surplus exceeds producer surplus by the greatest amount.
- (c) The areas of consumer and producer surplus are equal.
- (d) the combined amount of consumer surplus and producer surplus are maximized

25. The primary problem of economic is

- (a) To obtain more equitable distribution of money income
- (b) Production of a given output with the lowest cost combination of factors of production
- (c) Adoption of capital-intensive technology
- (d) Increase the quantity of the factors of production.

ANSWER KEY

1 D 6 C 11 B 16D 21 –

2 A 7 D 12 B 17 - 22 D

3. B 8 C 13 A 18. D 23 B

4 A 9 D 14 C 19 D 23 B

5 B 10 D 15B 20 B 25 B

EXPLANATION TO ANSWERS

1. Utility is the amount of satisfaction a consumer derived from consuming a particular commodity. (D)

2. A consumer will consume more of a commodity when $MU > MC$

On an ideal situation consumer maximizes satisfaction when the marginal benefit equisite the marginal cost and the

marginal benefit reduce as more and more of the commodity is consumed. Hence, consumer should consume more

of the commodity to reduce marginal benefit and equate it with marginal cost (A)

3. Macro is derived from the Greek work "Makros" meaning "large" Hence, macroeconomics is the study of the

economy at large. (B)

4 The selfish interest convention of Adam Smith implies that every individual operate in favor of his or her personal

self. That is to increase their personal utility.(A)

5 Option describes dumping It is a method used to get rid of some less valuable producer' country.(B)

6 A hand-out CPC explain the concept of scarcity. It means that to increase the input of a product the input of another

product, must be reduced at increasing rate.(C)

7 A downward slopping ppc implies a constant rate of a production. In other words. it implies an identical price for

the two products.(C)

8 To operate efficiently is to operate along the ppc where all available resources are fully and gradually utilized. ©

9 It supply increase and demand decrease, the equilibrium price will fall. Option D is obviously correct, But for the

other option the issue of decrease in price will depend on the rate of increase or decrease of demand or supply

which is not given. (B)

10 Economy develop on surplus net capital formation i.e net investment thus if capital consumption (depreciation) is

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so large as to absorb more than the whole capital formation, the economy stock of capital (i.e. initial capital

formation) will slowdown. (D)

11 $50 - .47 \times 100 = 3 \times 100 = 6\%$ (B)

Unemployment rate is the proportion of unemployed labour to total labour force.

12 Structural unemployment occurs when there is sudden change in the structure of the economy. If a labour

intensive economy suddenly change to a capital intensive economy standard unemployment will no doubt occur

13 Note that the total income is divisible into consumption and saving

i.e. $Y = C + S$. Hence, the $MPC + MPS = 1$. Therefore, the higher the MPC the lower the MPS , since the two must add up to 1 (A)

14 Given a circular flow of income for a particular economy investment tends to boost the flow of income hence it is

called injection whereas savings will slow the pace of the circulation flow of income hence named withdrawal

leakages (C)

15 For a particular fiscal year, if government decides to spend more than its expected revenue it will surely incur

deficit. This type of budget is termed Budget Deficit. (B)

16 According to the fisherian equation of exchange, $Mv = PT$ money supply varies with price level, given that the

velocity and the level of transaction is constant (D)

17. $LRR =$

$\text{Initial Deposit} \times 100 = 40,000 \times 100 = 16.1\%$

Deposit Created 240,000

18. The discount rate or the minimum rediscount rate (MRR) in Nigeria is the rate at which the central bank of Nigeria lends to commercial banks to control money supply in the economy (D)

19. Elasticity of demand is the proportional change in quantity demanded to proportional change in price

20. $\frac{3,000 - 5,000}{3,000} \times 10 = \frac{-2,000}{3,000} \times 10$

$= -6.67$

Option B seems to close to the answer but substitutability and complimentary of a commodity is deforming with cross

elasticity

21. $C = C^o + CY$

$C^o = 100$ (i)

$CY = L = 0.8Y$ (ii) ($= 100 + 0.8y$) (C)

22. If the quantity demanded of a commodity increases from the increase in consumers' income, then such goods is a

normal goods (D)

It is a perfectly elastic demand curve which reflect no change in price of the commodity irrespective of the change in quantity demanded.

24. Allocation efficiency is reached only at equilibrium point. At this point, both producer's and consumer's surplus

must be equal. (C)

25. The primary concern of economics is to satisfy needs with available limited resources. (B)

GEOGRAPHY

UNIVERSITY OF JOS 2006 POST UME TEST

1. The earth rotates through 150 of longitude once in (a) A minute (b) an hour (c) 24hours (d) a day
2. Aeolian erosion refers to the work of (a) Plants (b) wind (c) ice (d) running water
3. The scale of a map is the ratio between the (a) Distance over the land and the distance over the water (b) Distance on the map and the distance on the globe (c) Vertical and horizontal differences (d) Distance on the map and that on the earth's surface
4. Which of the following scales should show the greatest amount of detail on map?
(a) 1:50,000 (b) 1:500,000 (c) 1:20,000 (d) 1:200,
5. Which of the following statement is not true for lines of latitude?
(a) They form parallel circle
(b) they range from 00 to 180 N and S
(c) only one line is also a Great circle
(d) they form parallel circle
6. Large in area and high in population which of the following countries fits this description?
(a) Lesotho (b) Togo (c) Nigeria (d) Zaire
7. One of these is NOT a landform in Africa (a) S carp (b) Isenberg (c) Drumlin (d) Doline
8. Which of these does not lie in the principal earthquake regions of the world?
(a) Japan (b) Kenya (c) Iran (d) Turkey
9. Which of these soil groups is considered the most productive?
(a) Chernozems (b) Latosols (c) podzols (d) Sierozems
10. One example of inland drainage lake in Africa is
(a) Lake Chad (b) Lake Victoria (c) Lake Malawi (d) Lake Turkana
11. The African river that crosses the equator twice is
(a) Zaire (b) Nile (c) Mississippi (d) Amazon
12. Some rivers in the delta region break into many branches before entering the sea. These divisions are known as: (a) Creeks (b) Dstibutaries (c) tributaries (d) Effluents
13. Kariba Dam is found in River (a) Zambezi (b) Congo (c) Niger (d) Nile
14. The major air affecting theclimate of West Africa in summer is the
(a) harmattan wind (b) tropical continental (c) warm equatorial (d) tropical maritime
15. If a map has a scale of 1:50,000 and a cocoa plantation is represent on the map by a rectangle 4cm by 3cm. what is the area of the plantation? (a) 3sq.km (b) 30sq. Km (c) 12sq.krn (d)20sq.km
16. The gap between two ranges within Which transportation is usually possible in a mountainous is called
(a) Valley (b) col (c) ridge (d) spur
17. What are Greenhouse gases
(a) Gases found around green houses in botanical gardens
(b) Gases which are able to trap heat on the earth surface
(c) Gases which help glob a! circulation of winds and plant growths
(d) Gases which help farmers grow certain crops during the dry season.
18. The doldrums refer to
(a) land area bordering the conthence of the blue and with Nile
(b) area of intense weather activities around the Mediterranean
(c) area in south Atlantic where cold and warm currents meet
(d) area within a few degrees north and south of the equator

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19 Nigeria sat is designed primarily to

- (a) Help GSM providers in achieving a wide national coverage
- (b) strengthen rapid response by Nigeria 's Armed Forces
- (c) Help in the 2006 Census
- (d) Provide information about various regions of the earth.

20 The major sedimentary minerals found in Nigeria include:

- (a) Tin, Columbite and gold (b) tin, coal and salt (c) limestone, columbite and diamond (d) limestone, petroleum & coal

21 The cloud which are white globular masses, forming ripples in the sky is called

- (a) Cirrus (b) cirrocumulus (c) altocumulus (d) altostratus

22 Which of the following routes must have the least gradient (a) motorway (b) rail line (c) bush path (d) canal

23. The foremost producer of petroleum in the Middle East are:

- (a) Saudi Arabia, Kuwait Libyan Iran
- (b) Saudi Arabia, Iraq, Iran and Kuwait
- (c) Saudi Arabia, Iran, Venezuela and Oman
- (d) Saudi Arabia, Iraq, Libya and Venezuela

ANSWER KEY

- 1. B 6.C 11 A 16 B 21B
- 2. B 7.C 12 B 17 B 22B
- 3. D 8.B 13 D 18 D 23 B
- 4. B 9.A 14 D 19 D
- 5.B 10A 15 A 20D

UNIVERSITY OF JOS

2007 POST UME TEST GEOGRAPHY

1. At what time of the day will a traveler reach Gatwick airport in London if he leaves Nigeria at 5am on a 6hr flight

during the winter? a. 11hr b. 12.00hr c. 15.00hr d. 13.00hr

2. Which of the following is not an Anglophone country?

- a. Ghana b. Gambia c. Liberia d. Senegal

3. The shallow part of the sea which separates the deep from the land is called

- a. of shore coastal lowland
- b. the on shore tidal current
- c. continental shelf formation
- d. coastal coral cliff

4. The port that handles the highest volume of cocoa export in Nigeria is

- a. Sapele b. Warn c. Lagos d. Port Harcourt

5. One major characteristic of rural settlements is that;

- a. are heterogeneous
- b. are homogeneous
- c. are large in size
- d. have more problems than urban settlements

6. Industrialization in Nigeria can best be promoted through the development of

- a. textile industry b. Leather industry c. iron and steel industry d. automobile industry

7. Most of the industries located in rural areas are mw enerev consumers'

- b. high energy consumers'
- c. raw materials oriented
- d. transport oriented

8. The distribution of mineral resources in Nigeria is related to its:

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- a. relief b. soil c. vegetation d. geology
9. Which of the ocean currents is classified as cool?
a. Benguela b. Kuro Siwo c. Gulf Stream d. Mozambique
10. The sea area with the highest degree of salinity is the
a. Baltic Sea b. Caspian Sea c. Dead Sea d. Mediterranean Sea
11. The thermometric scale usually employed to describe the absolute temperature of the atmosphere is
a. Centigrade b. Celsius c. Kelvin d. Fahrenheit
12. If the temperature at sea level in a particular place is 25°C, a place 3500m above sea level in the same area will have a temperature of
a. 2.75°C b. 2.25°C c. 2275°C d. 22.75°C
13. Which of the following is not a form of precipitation? a. dew b. snow c. hail d. fog
14. Which of the following pressure belts does not experience descending air?
a. 60°N b. 60°S c. 0°latitude d. 30°N
15. In the Tropics, the most variable climatic element inter-annually is
a. temperature b. solar radiation c. pressure d. rainfall
16. Soils that are formed by wind deposition are called
a. laterites b. b. bess c. Podzols d. prairies
17. Desert soils are usually deficient in
a. fertility b. light grey colour c. humus content d. horizons
18. Podzols and laterites share the following characteristics in common, except
a. infertility b. high degree of leaching c. associated with forest vegetation d. colour
19. The forest type which is the most rich in tree species is the
a. Tropical b. Deciduous c. Coniferous d. Mediterranean
20. Linseed oil is associated with
a. flax b. coconut c. olives . rapeseeds
21. Which of the following is not correct with regard to the Solar System?
a. the planets all orbit round the sun
b. the sun is only a source of the energy needed on the planets
c. the earth as well as the other planets rotate around the sun
d. all the planets have definite orbits around the sun
22. Fossils fuel reserves are found in the Lake Chad basin because
a. the basin lies approximately along the axis on which the rich Bakassi oil fields are found
b. The basin is at the edge of the desert with conditions similar to that Iraq
c. It is an inland drainage basin with many large rivers emptying into it
d. Its rocks are sedimentary
23. Which of the following is correct?
a. The Canaries current is cold and washes the coast of NE Africa
b. The Peruvian current is warm and washes the west coast of America
c. The Gulf Stream is warm and moves north eastward on the Atlantic
d. The Middle East current is warm and washes the coast of Saudi Arabia
24. Which of the following formulae is the current one of the converting X° Fahrenheit temperature readings into Centigrade temperature readings (Y°)?
a. $Y = (X + 32) \times \frac{5}{9} \text{ } ^\circ\text{C}$ b. $Y = (X - 32) \times \frac{5}{9} \text{ } ^\circ\text{C}$ c. $Y = (X - 32) \times \frac{9}{5} \text{ } ^\circ\text{C}$ d. $Y = (X + 32) \times \frac{9}{5} \text{ } ^\circ\text{C}$

ANSWER KEY

- 1A 2D 3C 4C 5B 6C 7C 8D 9 D
10C 11C 12- 13D 14A 15C 16B 17A 18C
19A 20A 21C 22D 23B 24C

EXPLANATION TO QUESTION ONE

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Nigeria on longitude 15° E (5 am)

London on longitude 0° = 5am +6 hrs =11 am

Since London is 1 hrs (150) behind Nigeria

∴ 11 am—1hr= 10am London time

Therefore, 11 am Nigeria time = 10am London time.

UNIVERSITY OF JOS 2008 POST UME TEST GEOGRAPHY

1. Global Positioning Systems (GPS) help in
 - (a) combating crime
 - (b) providing early warnings against disasters
 - (c) climate change monitoring
 - (d) locating positions on the earth surface.
2. One of these is not a factor of population growth
 - (a) poverty (b) migration (c) prosperity (d) housing.
3. Which of this is not a major problem of Kainji dam?
 - (a) Increase in the herds of cattle that depends on waters
 - (b) Increase in usage of Niger republic
 - (c) silting of the dam
 - (d) growing demand for irrigation water.
4. The East African large lakes are together described as
 - (a) Great Lakes St Lawrence Sea Ways
 - (b) Rift Valley Lakes
 - (c) sources of large rivers like Nile
 - (d) products of the formation of Kilimanjaro.
5. One of these is not true of rain gauges:
 - (a) Rain gauges provide excellent measurement of rain fall
 - (b) Their measurement may be affected by the particular type used
 - (c) their readings may be influenced by the slope of the land
 - (d) Rain splashes during heavy rains may lead to over estimation.
6. Ox bow lakes are found in
 - (a) lower courses of some rivers
 - (b) wind bow out sites
 - (c) places with history of tectonism
 - (d) areas of subsidence
7. Coombes are associated with
 - (a) honey-bee farms (b) karst environment (c) rift valleys systems (d) oases in the desert
8. The Stevenson's screen is used to keep
 - (a) barometers (b) thermometers. (c) hygrometers (d) evaporimeters.
9. South East Asia is noted for its regular experience of
 - (a) hurricane (b) tornadoes (c) typhoons (d) strong winds.
10. Horse latitudes refer to
 - (a) areas around the gulf of Guinea
 - (b) areas around the equator areas around the Mediterranean sea
 - (d) areas around latitude 30° in both hemispheres.
11. "High uniform temperature and heavy well distributed rain fall through out the year" describe
 - (a) Equatorial rain forest climate
 - (b) Mid-latitude friendly environment
 - (c) the zone of the forest with a lot of agricultural potentials
 - (d) the Great Amazon basin including the Brazilian forest

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12. One of the following is least important to ocean movement
(a) salinity of the ocean water (b) temperature of the water (c) planetary winds (d) curvature of the coastal areas.
13. Which features on a topographical sheet would you analyze to characterize the configuration of the area covered by the sheet
(a) Isoyet and isolines
(b) ranges and spot heights
(c) contour lines for cross section
(d) contour lines for slope estimates.
14. The greatest challenge to future use of automobiles is
(a) advances in air travels
(b) identification of alternative to fossils
(c) changing and more reliable technology for rail transport
(d) population growth.
15. The cloud which are white globular masses, forming ripples in the sky is called
(a) Cirrus (b) Cirrocumulus (c) altocumulus (d) altostratus
16. Which of the following seas has the highest degrees of salinity in the world?
(a) Caspian sea (b) Mediterranean sea (c) Dead sea (d) Esker.
17. Which of the following landforms is formed due to the process of glacier erosion?
(a) Corrie (b) Valley bench (c) Hanging valley (d) Esker (b) Valley bench (c) Hanging valley (d) Esker
18. Which of the following rivers does not drain into the Atlantic Ocean?
(a) The Niger (b) The Indus (c) The Amazon (d) The Volta
19. Which is the main crop grown in the Gezira plains
(a) Wheat (b) Millet (c) rice (d) Cotton
20. Which of the following countries has a large number of people of African descent?
(a) England (b) Canada (c) Chile (d) Brazil
21. When it is 12:00 noon on longitude 30°E, what is the time on longitude 15°W
(a) 9:00a.m. (b) 9:00p.m. (c) 5:00p.m (d) 5:00a.m
22. Which of the following Nigerian towns is NOT situated near a big river? (a) Lokoja (b) Onitsha (c) Jebba (d) Abuja
23. Fishing is the mainstay of the economy of (a) Libya (b) Iran (c) Iceland (d) Chad
24. The statement '1 cm to 2 km' can be represented by the ratio of
(a) 1:50,000 (b) 1:500,000 (c) 1:20,000 (d) 1:200,000
25. What is the local standard time in New York (75°W) when it is 2 p.m. in Accra?
(a) 7 p.m. (19:00hrs) (b) 7 a.m. (07:00hrs) (c) 9 p.m (21:00hrs) (d) 9 a.m. (09:00hrs)
26. On any day in the year at a specific time
(a) the sun is overhead along the equator
(b) the sun is overhead along the Tropic of Cancer
(c) the North Pole has 24 hours of daylight
(d) one half of the earth is in darkness
27. Which of the following is not a feature produced by volcanic activity?
(a) horst (b) caldera (c) dyke (d) geyser

ANSWER KEY

- 1 D 2 D 3 C 4 B 5 D 6 A
7. A 8. B 9. C 10. B 11. A 12. D
13. C 14. B 15. B 16. C 17. D 18. C
19. D 20. D 21. A 22. D 23. C 24. D

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25.D 26.D 27.A

Explanation to question 21& 25 21.

21. When it is 12noon on long 30E and long 15° W

Long difference $15^\circ + 30^\circ = 45^\circ$

Time difference $= 45^\circ / 15 = 3\text{hrs}$

Since East is a head of time .12.00 noon -3hrs =9.00am (A)

25 New York (75° W) =? Accra (10°) =2pm

Time difference = 75 = $75^\circ / 15^\circ = 5\text{hrs}$ Since Accra is eastward, it is ahead of time, Time in New York =2pm -5hrs =9am.

(D)

UNIVERSITY OF JOS GEOGRAPHY 2010 POST UME TEST

1. All planets have satellites except:

- a. Earth & Venus
- b. Mars & Mercury
- c. Mercury & Venus
- d. Neptune & Venus

2. Which of the following locations in Nigeria has the least mean annual rainfall total?

- a. Sokoto b. Maiduguri c. Potiskum d. Nguru

3. Which of the following is not the karst features?

- a. Poljes b. Uvala c. Kopjes d. Dolines

4. The world's longest river is: a. Amazon b Mississippi c. Nile d. Chang Jiang

5. One of these is a feature of a rejuvenated river:

- a. incised meanders b. braided channel c. delta d. levees

6. Which one of these is not is a thermometric scale:

- a. Celsius b. Kelvin c. Fahrenheit d. Octas

7. Which of these is not a form of condensation? A. Snow b. Rime c. Cloud d. Fog

8. Cyclones are centres of

- a. relatively low pressure
- b. relatively high pressure
- c. Tsunamis
- d. turning around of winds

9. The best natural harbour in West Africa is at a. Lome b. Tema c. Lagos d. Freetown

10. Sandstone is metamorphosed into a. Slate b. Schist c. Graphite d. Quartzite

11. The navigability of River Nile is limited because

- a. it is too long b. it is too shallow c. it flows during the wet season only d. it has several cataracts

12. The cloud which is closely associated with thunderstorms is

- a. strato-cumulus b. Cirrocumulus c. Cumulus-nimbus d. Alto-stratus

13. Drought-tolerant plants are a. Epiphytes b. Hydrophytes c. Dr. oughytes d. Xerophytes

14. Campos is the name for the grassland in a. North America b. South America c. Africa d. Asia

15. When the moon comes in between the earth and the sun in a perfect straight line, it is known as

- a. Eclipse of the moon b. lunar eclipse c. solar eclipse d. Eclipse of the earth

16. The earth rotates

- a. South east-South west b. south west-South east c. West- East d. East - west

17. A degree latitudinal distance is approximately a.70km b. 111km c. 180km d.360km

18. Large masses of moving ice in the oceans are a. glacier b. iceberg c. ice-sheet d. ice-caps

19. The world driest desert is a. Atacama b. Sahara c. Kalahari d. California

20. A linejoining places of equal salinity is a. Isohaline b. Isoneph c. Isohyets d. Isohel

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21. Which of these is not on the western side of continental land masses?
a. Aguihas b. Canary c. Peruvian d. California
22. In general, temperature decreases from the Equator towards the Poles because
a. angle of incidence of sun's rays increases towards the poles
b. angles of incidence of sun's rays decreases towards the pole
c. snow-cover of the higher latitudes reduces the temperature
d. snow falls rather than rain in the poles
23. Which of the following continents is crossed by both the Tropic of Cancer and Tropic of Capricorn?
A. Asia b. S. America c. N. America d. Africa
24. The sea bed, bordering the continents which is covered by shallow water is known as
a. continental slope b. coral reef c. continental shelf d. continental platform e. continental drift
25. The result of a football match completed at 6.00pm at Accra (Ghana) and immediately announced over the wireless was heard at 12.00noon same day at another city. The longitude of the city is
a. 90°E b. 60°E c. 90°W d. 45°W e. 60°W

ANSWER KEY

1C 2B 3C 4C 5A 6B
7B 8A 9D 10D 11D 12C
13D 14B 15 16C 17B 18B
19B 20A 21A 22A 23D 24C 25C.

Explanation for Question 25

Accra (o) 6 pm

Another city 12 noon

Time differences — 6 hrs

Since 1 hrs= 15°

∴ 15x6=90°

Since Accra is ahead of time the place must be in the West (90°W) (C)

UNIVERSITY OF JOS GEOGRAPHY 2006 POST UME TEST

1. The farm Flintcomb — Ash is symbolic of:
a. Tess's fallen state
b. Tess's innocence
c. Tess's happiness
d. The suffering and ill — luck that is Tess's fate
2. Prince in the novel, is
a. The title of Tess's ravisher
b. Angel Clare's other name
c. The name of a horse
d. The name of Tess's brother
3. The period Tess spends at Talbothays is the period of her:
a. The happiest period of her life
b. The period she suffers most horribly in the novel
c. The period she falls into temptation
d. The period when she becomes pregnant.

The following three questions are on William Shakespeare Hamlet

4. The play Hamlet may be described as a tragedy of:
a. Belief in ghosts
b. Marital infidelity
c. Indecision and procrastination

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- d. Inordinate love of father by son
5. Prince Hamlet refrains from Killing King Claudius while the latter is praying because.
- He does not want to murder a pious man
 - He is not yet fully convinced of his uncle's-t
 - King Claudius might thereby gain eternal
 - Murder of a person praying is an unpardonable sin
6. Which of these best describes setting in a novel
- The place where an event takes place
 - The time when an event takes place.
 - The place and time of an event
 - The background of an event
- The next three questions are on Attahiru, Ahmed Yerima's play**
7. The play starts with a
- Flashback
 - Prayer
 - Muezzin
 - Dialogue
8. Caliph Attahiru invites Mallam because
- Mallam has offended the caliph
 - Mai Wurno needs to be talked to
 - Attahiru wnts Mallam to explain the dream he had
 - Mallam and Mai Wurno are friends
9. Caliph "You have spoken well. I agree with the Waziri's suggestions.
- You shall both organize your men and build new well in the market. That is our judgment What informed this statement?"**
- Waziri's fight with the whiteman
 - Waziri's disagreement with Sarkin Zango life
 - The dispute between Caliph Attahiru and Prince Muhammed al — Tahir
 - The dispute between Sarkin Zango and Sarkin fatake.
10. A brief but witty expression is called: a. Song b. Epigram c. Enecdote d. Joke
11. Pastoral poetry refers to the poetic composition of
- Clergymen
 - Friare
 - Scops
 - Shepherds
12. A literary composition that employs wit and humour to ridicule persons or institutions is
- Drama
 - Satire
 - Norella
 - Clergy
13. In a tragedy, the moment when the protagonist suffers a reversal of fortune is known as –
- Catharsis
 - Exposition
 - Anagnonsis
 - Peripeteia
14. A five line poem that treats a nonsensical subject with humour is a
- Quartet
 - Limerick
 - Panegyric
 - Sestet
15. Which of the following statements is most true about poetry
- The meanings of words are more important than their sounds
 - The sounds of words are more important than their meanings
 - The sounds of words are often more important than their meanings
 - Sounds and meanings of words are of little consequence
16. The expression "coin of gold" in Naett, coin of gold is
- Personification
 - Epithet
 - Metonymy
 - Metaphor
17. What figure of speech is "shining coal"? a. Paradox b. Irony c. Oxymoron d. paronomasia
18. The rhythm of the poem "Serenade" is a. Blue b. Jolting c. Jerky d. Measured
19. Which of these best defines exposition in drama?
- The author's own general introduction to the play
 - The author's early exposure of his dramatis personae to conflict
 - Introduction to the characters and the general problems with which the play deals
 - The first performance of the play on stage

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The next two questions are on an extract from a poem by Thomas Hardy, Read the lines carefully and answer the questions that follow:

We stood by a pond that winter day, And the sun was white, as though chidden of God And a few leaves lay on the starving sod,They had fallen from an ash, and were grey.

20. The tone or mood of the speaker in the poem is: a. Neutral b. Angry c. Happy d. Sad

21. "starving sod" here is: a. a metaphor b. a personification c. simile d. paradox

22. In Leopold Sedar Senghor's "I will pronounce Your name" Naeth represents

a. Africa b. Senegal c. The poet's mother d. The poet's lover

23. In Ofeimun's "We Must Learn Again to fly" cumulus Symbolises:

a. a cloud b. old age c. sounded masses d. black hair

ANSWER KEY

1C 2 C 3A 4 A 5B 6 C

7 A 8 C 9D 10B 11D 12 B

13D 14 B 15 A 16D 17C 18 B

19C 20 D 21 A 22D 23C

CHRISTIAN RELIGIOUS KNOWLEDGE

UNIVERSITY OF JOS 2006 POST UME TEST

1. In Jesus teaching on the mount, the only justifiable reason for divorce is:

a. Indolence b. Insubordination c. Infidelity d. Infertility

2. According to John's Gospel, Lazarus was from: a. Jerusalem b. Teberias c. Bethany d. Galilee

3. Jesus's new commandment according to the Gospel of John is:

a. Salvation b. Love c. Peace d. Spirit

4. The thief as described by Jesus comes to

a. Destroy, kill and steal

b. Destroy, steal and kill

c. Kill, destroy and steal

d. Steal, kill and destroy

5. The agony of Jesus in the Garden of Gethsemane is a

a. Sign of abandonment

b. Manifestation of human weakness

c. Punishment

d. Preparation for his death

6. Eutychus fell from the third storey to the ground when Paul prolonged his sermon at

a. Troas b. Ephesus c. Miletus d. Corinth

7. Charismatic leaders in the Book of Judges arose in Israel to

a. Revive faith in Yahweh

b. Rally the tribes together

c. Lead Israel to battles

d. Settle dispute

8. What did God create on the fifth day?

a. The firmament b. The two great lights

c. Water under the heavens

d. Living creatures

9. Joshua and Caleb were from the tribe of a. Judah and Reuben

b. Reuben and Dan

c. Ephraim and Reuben

d. Judah and Ephraim

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10. Manahem, the son of Gadi reigned over Israel for
 - a. Eight years b. Twenty Years c. Six months d. Ten years
11. The death of Adonibezek in Bezek was a typical proof of
 - a. Cowardice b. Nemesis c. Insanity d. absurdity
12. In order that Benjamin might be brought to Egypt, Joseph detained
 - a. Reuben b. Levi c. Judah d. Simeon e. Zebulon
13. When Paul came to Rome, the first set of people to whom he preached were the
 - a. Romans b. Jews c. Greeks d. Samaritans
14. The three sons of Noah were Shem, Ham and
 - a. Lot b. Hirah c. Cain d. Japeth
15. The renomend interpreters of the Mosaic Law in the time of Jesus were the
 - a. Sadducees b. Scribes c. Herodians d. Pharisees
16. The mother of Esau is a. Ruth b. Ester c. Rebecca d. Jezebel
"I am to be gathered to my fathers; bury me with my fathers" (Gen 49:29).
17. Who was the speaker? a. Joseph b. Jacob c. Job d. James
18. When did he say this?
 - a. When he was about to die
 - b. When he was seriously sick
 - c. When he offended God
 - d. When his brother cheated him
19. What was his wish?
 - a. He wanted to be buried at Canaan in the cave at Ephron
 - b. He wanted to be buried at Jericho
 - c. He wanted to commune with his ancestors
 - d. He wanted to be close to his father
20. Who was authorized by god to go and liberate the Israelites from the Egyptian bondage?
 - a. Joshua b. Daniel c. Solomon d. Moses
21. The names of the two king s of Jericho destroyed by the Israelites during the conquest were
 - a. Adonija and Haggith b. Hion and Og c. Zadok and Benaiah d. Hiram and Jeroboam
22. Who is an atheist?
 - a. Someone who does believe in God
 - b. Someone who rejects completely the idea of a divine being
 - c. Someone who believes that it is impossible to know if there is God or not
 - d. Someone who abhors religious people
23. What is meant by the Christian doctrine that God is Trinity?
 - a. The idea started in Trinidad and Tobago
 - b. God is three persons in one
 - c. God is omnipotent
 - d. God is the Holy Spirit

ANSWER KEY

1. C 2. C 3 B 4D 5 B 6B
7. A 8 D 9 D 10 A 11 B 12A
13. A 14 B 15 D 16C 17 B 18 A
- 19 A 20 B 21 A 22B 23 B

UNIVERSITY OF JOS 2007 POST UME TEST CHRISTIAN RELIGIOUS KNOWLEDGE

1. He shall save his people from their sins. Who is being referred to here?
 - a. John the Baptist b. Elijah c. Elisha d. Jesus
2. The person who the Bible calls the son of consolation is:
 - a. Barsabas b. Barabbas c. Barnabas d. Bathsheba

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3. Who do people say the son of man is? Jesus asks this question to know people's
a. Desire b. Demand c. Mind d. opinion
4. In Peter's teaching, "God the proud and gives grace to the humble."
a. Receives b. Relegates c. Resists d. Restores
5. The lesson which Jesus teaches in the parable of the Good Samaritan is that your neighbor is:
a. Only your friend b. Your next of kin c. A distant friend d. Anyone who needs your help
6. Amram and Jochebed gave birth to:
a. Miriam b. Jedida c. Jethro d. Hur
7. The two Hebrew midwives instructed by Pharaoh to kill the Hebrew male babies at birth were:
a. Zipporah and Puah
b. Puah and Miriam
c. Shiphrah and Zipporah
d. Shiphrah and Puah
8. Israel went into Assyrian captivity in
a. 71 AD b. 720 BC c. 722 BC d. 68AD
9. Daniel was delivered from the den of lions for all the following reasons except
a. His holiness and faith
b. His Kindness c. God's love for him
d. God's mighty power
10. Which of the following carried Judah into captivity?
a. Pharaoh Neco of Egypt b. Goliath of Philistia c. Assyrians d. Nebuchadnezzar of Babylon
11. The last thing which Zedekiah saw before his eyes were removed was the
a. Egyptian army b. Slaughter of all his sons c. City of Jerusalem d. Feasting of the children of Israel
12. The prophet who was with the exiles of 597 BC in Babylon was
a. Moses b. Hosea c. Micah d. Ezekiel
13. The King of Persia who made it possible for the return of the exiles from Babylon was
a. Darius b. Cyrus c. Zechariah d. Zerubabel
14. The meaning of Emmanuel is
a. Laughter b. "For I draw him from water" c. God with us d. The fear of God
15. Bring your necks under the yoke of the King of Babylon and serve him and his people and live" Who gave this advice?
a. Jeremiah b. Isaiah c. Ezekiel d. Amos
16. One of the following said: "The Lion has roared, who will not fear?" The Lord has spoken, who can but prophesy?
a. Nathan b. Jeremiah c. Amos d. Hosea
17. Where did Paul cure a slave girl who had a spirit of divination?
a. Philippi b. Ephesus c. Athens d. Antioch
18. Joshua's first victory was over the people of
a. Ai b. Gibeon c. Gilgal d. Jericho
19. Josiah's reign was popular because of his
a. Allies b. Victory c. Violence d. Reforms
20. The meaning of Ephphatha is a. Be opened b. Be still c. Be silent d. Little girl, arise
21. Who baptized the Ethiopian eunuch? a. Paul b. Peter c. Philip d. Rufus
22. Moses fled from Pharaoh at the age of a. 45 b. 40 c. 85 d. 120
23. Which of the following Prophets was described as the weeping Prophet?
a. Amos b. Ezekiel c. Jeremiah d. Zephaniah
24. Who was the Priest that confronted Uzziah in the temple

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a. Zadok b. Phineas c. Azariah d. Aaron

ANSWER KEY

1. E 2. C 3 C 4 B 5 D 6A
7. A 8 B 9A 10 D 11B 12D
13. B 14 C 15 C 16 D 17 B 18D
19 D 20 D 21 C 22 B 23 C 24—

UNIVERSITY OF JOS 2008 POST UME TEST

CHRISTIAN RELIGIOUS KNOWLEDGE

1. Name the place Christian religious people look up to find the truth about the nature of God.
 - a. In the sacred scripture
 - b. In the religious leaders
 - c. In the church
 - d. In their conscience
2. What are the lessons of Jesus conversation with the Samaritan woman to you? (Jn 1: 7 - 15).
 - a. By his action of chatting with the woman, Jesus broke the cultural barriers of his day
 - b. Christian in Nigeria must break cultural or ethnic barriers and share Christ's love with others irrespective of cultural and ethnic differences
 - c. He bridged the social gap between Jew — Samaritan animosity
 - d. He bridged the gender gap between Jewish-male and gentile - female differences
3. Explain why Jesus was identified as the Lamb by John (Jn 1:29)
 - a. Lamb of God is a figurative language which describes Christ's sacrificial mission in the world
 - b. He is being compared to the Passover lamb that would atone for the sins of all
 - c. Because the lamb is attentive to his owner
 - d. It shows patience, meekness, gentleness and innocence
4. Who do people say the son of man is? Jesus asks this question to know people's
 - a. Desire b. Demand c. Mind d. Opinion
5. In Peter's teaching, "God the proud and gives grace to the humble"
 - a. Receives b. Relegates c. resists d. restores
6. The lesson which Jesus teaches in the parable of the Good Samaritan is that your neighbor is:
 - a. only your friend b. your next of kin c. a distant friend d. anyone who needs your help
7. He shall save his people from their sins. Who is being referred to here?
 - a. John the Baptist b. Elijah c. Elisha d. Jesus
8. The person who the Bible calls the son of consolation is:
 - a. Barsabas b. Barabbas c. Baranabas d. Bathsheba
9. The last thing which Zedekiah saw before his eyes were removed was the
 - a. Egyptian army
10. Daniel was delivered from the den of lions for all the following reasons except
 - a. His holiness and faith
 - b. His kindness
 - c. God's love for him
 - d. God's mighty power
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- a. Zipporah and Puah
 - b. Puah and Miriam
 - c. Shiphrah and Zipporah
 - d. Shiphrah and Puah
15. The king of Persia who made it possible for the return of exiles from Babylon
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25. Joshua's first victory was the people of a. Ai b. Gibeon c. Gilgal d. Jericho
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27. Where did Paul cure a slave girl who had a spirit of divination?
- a. Philippi b. Ephesus c. Athens d. Antioch

ANSWER KEY

1. A 2. C 3A 4 C 5 B 6D
7. D 8 C 9 B 10 A 11 D 12D
16B 17 C 18C
22D 23 D 24C

UNIVERSITY OF JOS

2009 POST UME TEST CHRISTIAN RELIGIOUS KNOWLEDGE

1. Before Moses died, God appointed to succeed him
- a. Aaron b. Balaam c. Joshua d. Manasseh e. Eleazar
2. Those bitten by the fiery serpent were treated by a
- a. Drinking from the Red sea
 - b. Fasting for seven days
 - c. Looking at the bronze serpent
 - d. Call upon the lord e. Repent
3. "Let his habitation be made desolate, and let there be no one to live in it". Who is being referred to here?
- a. King Saul b. Judas Iscariot c. Stephen d. Barnabas e. Mathias
4. The proconsul when Paul arrived in Corinth was called
- a. Festus b. Pontius c. Pilate d. Galileo e. Agrippa f. Felix
5. "Now I know that Lord has sent his angel to deliver me Who said this?"
- a. Joseph b. Moses c. Paul d. Peter e. Stephen
6. The flood lasted when Noah was in the Ark for
- a. Two weeks b. Ten weeks c. Ten days d. A hundred days e. A hundred and Fifty days

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7. Joshua's first victory was in a. Ai b. Gibeon c. Jordan d. Gilgal e. Jericho
8. 'There shall be neither dew nor rain this year except by my word'. Who said this?
a. Moses b. Pharaoh c. Elijah d. Esther e. Paul
9. In the parable of the sower, the seeds on the ground represent those who
a. Accept and live by the word of God
b. Feed the poor
c. Have and love riches
d. Give alms in market places
e. Preach the word of God
10. According to Psalm 51, the sacrifice acceptable to God is
a. A clean heart b. Obedience
c. A blemishless lamb
d. A broken spirit
e. Head flowing with oil
11. Which Prophet cried thus "woe is me" For lost, for I am a man of unclean lips
a. Hosea b. Jeremiah c. Isaiah d. Micah e. Haggai
12. Hosanna means
a. Ride on in majesty b. Ride on in glory c. Ride on to die d. Ride on to Calvary e. Save now
13. The seven deacons were appointed to
a. Replace the twelve
b. Lead the church in Jerusalem
c. Help in the distribution of Food
d. Preach the Gospel
14. Which Prophet encouraged Jeroboam 1 to revolt at the stage?
a. Hosea b. Jeremiah c. Isaiah d. Micah e. Haggai
15. Hosanna means
a. Ride on in majesty
b. Ride on in glory
c. Ride on to die
d. Ride on to Calvary
e. Save now
16. The seven deacons were appointed to
a. Conduct a mission to the Gentiles
b. Replace the twelve
c. Lead the Church in Jerusalem
d. Help in the distribution of food
e. Preach the Gospel
17. Which Prophet encouraged Jeroboam 1 to revolt at the initial stage?
a. Macaiah b. Jeremiah c. Nathan d. Ahijah e. Joel
18. "This lad is gone and where shall I go ". Who is being referred to hear
a. Isaac b. Joseph c. Peter d. Salas e. Elijah
19. A would be apostle who puts his hand to the plough and looks back lacks
a. Faith b. Kindness c. Repentance d. Total commitment e. Hope
20. In the case before Solomon over the dead and the living child, the mother of the dead child supported
a. Giving the living child to her opponent
b. Killing the living child
c. Joint ownership of the living child
d. King Solomon having the Living child

e. State ownership of the child

21. Who is reputed for pulling down the altar of Baal at the risks of annoying his father?

a. Joseph b. Jesse c. Gideon d. Samuel e. Samson

22. Those inspired by God to lead the tribes of Israel in battle were the

a. Judges b. Captains of the Guard c. Priests d. Prophets e. Levites

23. In order that Benjamin might be brought to Egypt, Joseph detained

a. Reuben b. Levi c. Jacob d. Simeon e. Zebulon

24. The conversion of Paul was made possible by

a. Simeon b. Zacchaeus c. The risen lord d. Mathew e. Barnabas

25. God told Samuel that He would punish Eli because he

a. Did not correct his son's sinful behaviour

b. Did not offer sacrifice as the law required

c. Did not warn the people of Israel to stop sunning

d. Warned his sons against rape and drunkenness e. Offered sacrifices to idols

26. The sun stood still when

a. Moses led Israel across the Red Sea

b. Jericho fell to the army of Joshua

c. Noah came out of the ark

d. Joshua defeated the Amorites at Gideon

e. Moses came down with the law

27. In the trade treaty between King Solomon and Hiram of Lebanon Solomon was to supply

Wheat and oil while

Hiram was to supply

a. Grains only

b. Precious stones

c. Wheat and olive

d. Timber

e. Silver

28. What did God create on the 6th day?

a. The firmament

b. Light

c. Dry land and Sea

d. Man and living creatures

e. The Sun, Moon and stars

UNIVERSITY OF JOS 2010 POST UME TEST

CHRISTIAN RELIGIOUS KNOWLEDGE

1. For which of the Prophets of God did the Bible record explicitly to have abandoned an agribusiness for a call to

serve God? a. Elisha b. Ezekiel c. Elijah d. Obadiah

2. Why did David spare the life of Saul at Ziph?

a. He recognized God's anointing on Saul

b. Saul was also an Israelite

c. He did not want bloodshed

d. He was Saul's in-law

3. Deborah was a judge when Israel was under the yoke of

a. Moab b. Midian c. Canaan d. Philistine

4. The treatment of those bitten by fiery serpent was to

a. Drink from the Red Sea

b. Look at the bronze serpent

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- c. Fast for seven days
 - d. Call upon the Lord
5. Which of these was detained by Joseph in order that Benjamin might be brought to Egypt?
- a. Reuben b. Levi c. Judah d. Simon
6. In the Biblical account of creation, man was permitted to
- a. Plant fruit trees for food
 - b. Water the garden
 - c. Make garment of hides and skin
 - d. Name all the creatures
7. Each of the spies sent out by Moses on God's command to report on the nature of the Promised Land was a
- a. Greatwarrior b. Wise judge c. Priest d. Leader in his own tribe
8. God revealed to Samuel that he was going to punish Eli because he
- a. Did not correct his son's sinful behaviour
 - b. Did not offer sacrifice as the law required
 - c. Did not warn the people of Israel to stop sinning
 - d. Warned his sons but did not punish them
9. The sun stood still when
- a. Moses led the Israelites out of Egypt
 - b. Jericho fell to the army of Joshua
 - c. Noah came out of the ark
 - d. Joshua defeated the Amorites at Gideon
10. When was this statement made?' I repent that I made Saul King'
- a. At the anointing of Saul
 - b. When Saul failed to pray
 - c. When Saul disobeyed God over Amalek
 - d. When Saul finished the morning offering
11. The commander of David's army was a. Abner b. Joab c. Abiathar d. Adonijah
12. What was the sin of David that involved Bathseba?
- a. Murder b. Adultery c. Dishonesty d. Arrogance
13. What is the meaning of Emmanuel?
- a. Son of Emmaus b. God is our redeemer c. God with us d. Saviour
14. What specific reply did John the Baptist give to the soldiers during his preaching?
- a. Collect no more than is appointed you
 - b. Do not begin to say to yourselves we have Abraham as our father
 - c. Bear fruits that befit repentance
 - d. Be content with your wages
15. Jesus taught that one should make friends quickly with one's
- a. Enemy b. Neighbour c. Master d. accuser
16. The Pharisees and the Scribes accused the disciples of Jesus of transgressing the tradition of the elders because they
- a. Did not regard synagogue rules
 - b. Did not pray before meals
 - c. Ate with unwashed hands
 - d. Disobeyed the elders
17. If anyone would be first, he must be last of all and servant of all what does this saying of Jesus teach?
- a. Endurance b. Lack of mobition c. Humility d. Relaxation

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18. Which religious groups asked Jesus about payment of taxes to Ceasar?
a. Pharisees and Sadducces
b. Pharisees and Herodians
c. Sadducces and Herodians
d. Herodians and Zealots
19. To whom was the body of Jesus Christ given for burial after his death?
a. Nicodemus the Pharisee
b. Simon of Cyrene
c. Simon the disciple
d. Joseph of Arimathea
20. Paul was accused of apparently being a preacher of foreign divinities in Athens because he preached Jesus and
the a. Cross b. Law c. Resurrection d. Second coming
21. What specifically makes Samson a unique Prophet of God?
a. He was a Nazarene
b. He loved honey
c. He killed many at his death
d. He spoke with power in riddles
22. It is not the sound of shouting for victory, o the sound of the cry of defeat, but the sound of singing that I hear".
When was this statement made?
a. At the consecration of the Israelites
b. At the crossing of the Red Sea
c. During the fall of Jericho
d. In a strange worship of a god
23. 'Blessed be the Lord God of Israel 'is a hymn of praise by
a. The Virgin Mary at the Annunciation
b. Zachariah at the birth of John the Baptist
c. Simeon at the presentation of Jesus in the temple
d. Elizabeth at the visit of Mary
24. The Shema emphasizes the
a. Unity of God
b. Richness of the spirit of God
c. Omnipotency of God
d. Crucial role of Israel in the world
25. The expression of dry bones in Ezekiel refers to'
a. An Israelites proverb
b. The whole house of Israel
c. The slain in the valley
d. Sinful Israelites and Judean

FINANCIAL ACCOUNTS & COMMERCE FINANCIAL ACCOUNTS

UNIVERSITY OF JOS, 2010 POST UME TEST

1. The bad debt account is closed by transferring the balance to
(a) credit of capital account
(b) debt of profit and loss
(c) debit of the debtor' personal account
(d) credit of profit and loss account
2. A credit note from a supplier would first e entered in the
(a) purchase book (b)sales book (c)returns inward book (d) return outward

3. Where a proprietor withdraws cash from the business for his private use, the entries would be
 - (a) credit cash account, debit proprietor's account
 - (b) credit proprietor' account, debit cash account
 - (c) credit proprietor' account, debit drawing account
 - (d) credit cash account, debit drawing account
4. Which of the following is a long term liability? (a) bank overdraft (b) bank deposit (c) goodwill (d) debenture
5. Which of the following is a function of the sales journal?
 - (a) It records both cash and credit sales
 - (b) It shows the balance in the sales account
 - (c) It records credit sales only
 - (d) It shows the aggregate balances in the debtor's lodge
6. Which of the following is the most liquid? (a) stock (b) debtor (c) machinery (d) loose tools
7. A debt balance on a bank statement indicate, that the
 - (a) bank is a debtor to the customer
 - (b) customer is a debtor to the bank
 - (c) bank is not a debtor to the customer
 - (d) customer is not a debtor to the bank
8. At the end of a trading period, wages due will be
 - (a) debited to trading account and shown as a current liability
 - (b) credited to profit and loss account and shown as a current liability
 - (c) credit to trading account and shown as a current asset
 - (d) debited to profit and loss account and shown as a current liability
9. Which of the following is not an asset?
 - (a) goodwill (b) general reserves (c) debtors (d) prepaying
10. A company's profit and loss account for a period is prepared by
 - (a) deducting total expenses from total revenues
 - (b) deducting total cash payments from total revenue
 - (c) deducting all outflows of funds from all inflow of funds
 - (d) balancing its receipts and payment
11. The journal is a book
 - (a) of prime entry into which all transactions are entered before posting
 - (b) kept by journalists for reporting events
 - (c) of prime entry into which posting are made from the ledger
 - (d) of analyzing major events
12. The receipts and payments of a club is the same as
 - (a) profit and loss account (b) trading account (c) cash book (d) control account
13. In a balance sheet, bank overdraft is
 - (a) current asset (b) fixed asset (c) long term liability (d) current liability
14. Money set aside for the servicing of businesses overheads is referred to
 - (a) capital expenditure (b) capital receipt (c) revenue expenditure (d) revenue receipts
15. Money spent on buying plots of land by a firm is
 - (a) capital expenditure (b) capital receipt (c) revenue expenditure (d) revenue receipts
16. Prepaid expenses is an item in
 - (a) fixed assets (b) current assets (c) current liability (d) long-term loan
17. Final accounts consists of (i) Cash book (ii) Trading account (iii) Profit and loss account (iv) balance sheet
 - (a) i only (b) i and ii only (c) iii and iv only (d) ii and iii only

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18. Trading account is prepaid to ascertain
(a) gross profit (b) net profit (c) gross profit or gross loss (d) net profit or not loss
19. A statement that shows the financial position of a business is
(a) profit and loss account (b) trading account (c) statement of income (d) balance sheet
20. Prepaid wages is an item in the (i) balance sheet (ii) profit and loss account (iii) Trading account (iv) cash account
(a) I, ii and iii only (b) I and iii only (c) I and ii only (d) iii and iv only
21. Partnership is a business owned and controlled by
(a) two member (b) two to ten persons (c) two to twenty persons (d) two to five persons
22. If a machine cost N2000.00 and its estimated life span is 10 years and its residuals is N500. The yearly value of depreciation is (a) N250.00 (b) 180.00 (c) N150.00 (d) N130.00
23. Bad debt is also known as
(a) unpaid debt (b) irrecoverable debt (c) payable debt (d) current debt
24. Bad debt is an item in
(a) Trading, profit and loss account
(b) consignment account
(c) balance sheet
(d) Receipt and expenditure account

ANSWER KEY

1. C 2D 3A 4D 5C 6A
7A 8D 9B 10 - 11A 12C
13D 14B 15A 16C 17D 18C
19B 20B 21C 22C 23B 24B

FINANCIAL ACCOUNTS & COMMERCE FINANCIAL ACCOUNTS

UNIVERSITY OF JOS, 2008 POST UME TEST

1. 'Caveat emptor' as a commercial legal word means
(a) let the seller beware (b) let the producer beware (c) let the buyer be awarded (d) let the buyer beware
2. The main feature of a supermarket is the sales of
(a) office equipment only (b) food stuff only (c) general house hold goods (d) building materials
3. The ship that is used as a sea taxi is called (a) linen (b) tramps (c) tankers (d) coasters
4. Which of the following is NOT a reward for labour (a) profit (b) salaries (c) Wages (d) allowances
5. The person who calculates premium, sums assured and surrenders value in insurance contract is called
(a) accountant (b) actuary (c) value (d) auditor
6. Under the law of insurance, exemption clauses
(a) protect the insured against the insurance company
(b) protect the insurance company
(c) protect the third party under the contract
(d) enable the insured to claim on the insurance company
7. In the contract of sale of goods, 'let the buyer beware' is signified by
(a) del credere (b) caveat vendetta (c) caveat emptor (d) res ipsa loquitor
8. The main purpose for establishing a public corporation is to
(a) provide employment (b) provide essential (c) make profit (d) establish a monopoly
9. Into which of the following two broad areas can trade be divided
(a) Home and foreign trade
(b) Whole and retail trade
(c) Imports and exports

- (d) Visible and invisible trade
10. Which of the following is not true of sole proprietorship?
- (a) It has a separate legal entity
(b) It has unlimited liability
(c) It has slim chances of expansion
(d) It can convert into company
11. Commerce means
- (a) the creation of utility
(b) exchange of goods and services
(c) exchange and distribution of goods and services
(d) exchange and distribution of goods
12. The most common means of transport in the riverine area is
- (a) bus (b) canoe (c) train (d) helicopter
13. Which of the following cheques could not be cashed across the counter?
- (a) Crossed cheque (b) Order cheque (c) Certified cheque (d) bearer Cheque
14. In marketing, any good or service that satisfies the consumer is called a
- (a) place (b) product (c) promotion (d) price
15. Which of the following is a non consumable item in the office?
- (a) Furniture (b) loose sheet (c) Office pins (d) file tags
16. One of the obstacles to achieving the objectives of ECO WAS is
- (a) lack of common currency (b) colonial linkage (c) sovereignty of states (d) language difference
17. One of the main objectives of establishing the Niger river basin commission was to
- (a) embark on a comprehensive survey of the available water resources
(b) carry out research for the development of fresh water fisheries
(c) develop infrastructures to facilitate economic activities
(d) promote trade among member-states to improve standards of living
18. The basic function of the Nigerian Port Authority is to
- (a) ensure that the right caliber of personnel is employed at the ports
(b) coordinates and regulate the activities of shipping lines
(c) facilitate and control the movement of goods and services into and out of the country
(d) coordinate the activities of all the seaports in the country
19. In Nigeria, the body that ensures that its members operate according to their professional ethics is the
- (a) SON (b) NPF (c) MAN (d) NAFDAC
20. The current highest decision-making body on privatization and commercialization of public enterprises in Nigeria is the
- (a) National council on Privatization (b) Securities and Exchange commission
(c) Nigeria Investment Promotion Commission (d) Bureau of Public Enterprises.
21. The principle of indemnity is NOT applicable to
- (a) life assurance (b) accident insurance (c) fire insurance (d) marine insurance
22. The advertising medium which combines sight and sound is the
- (a) radio (b) television (c) print media (d) poster
23. The closure of the unregistered patent medicine stores is geared toward sound
- (a) economic environment (b) social environment (c) physical environment (d) legal environment
24. Recommendations made by the central bank to the commercial banks in respect of their lending policy is known as
- (a) directives (b) Moral suasions (c) Advisory notes (d) Consolidation
25. Way bill is a document giving details of goods sent by

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- (a) Public vehicle, train and air (b) Train and ship (c) Ship alone (d) air alone
26. An association of the principal business concerns in an area is referred to as
(a) Article of association (b) Memorandum of association (c) chamber of commerce (d) Chamber of companies
27. Commission salesmen include the following except
(a) Factors (b) brokers (c) Del credere agents (d) Partners

ANSWER KEY

1. D 6. C 11C 16A 21B
2. C 7. C 12B 17A 22B
3. D 8. B 13A 18C 23D
4 D 9. A 14B 19C 24C
5. B 10 A 15A 20C 25C 26. C 27 C

FINANCIAL ACCOUNTS & COMMERCE FINANCIAL ACCOUNTS

UNIVERSITY OF JOS, 2009 POST UME TEST

1. Which of these is a form of sales promotion?
(a) Advertising on radio (b) Offering free samples (c) Distributing printed materials (d) advertising on internet
2. Which of the following has the shortest effect on the consumer?
(a) Fashion (b) Innovation (c) Fad (d) Attribute
3. The business in the stock exchange is characterized essentially by
(a) dealing (b) Brokage (c) Speculations (d) transactions
4. The insurance policy which provides full cover against all risk at sea is known as
(a) policy with particular average (b) policy free of particular average
(c) Marine freight insurance (d) marine voyage policy insurance
5. A major liability of a commercial bank arises from
(a) customer's deposit (b) loans and advances (c) Overdrafts (d) staff allowances
6. In the channel of distribution, which of the following sets is entirely is entirely made up of middle men?
(a) wholesale, retailer and agents
(b) Manufacturers, consumers and retailer
(c) wholesales, agents, and consumers
(d) Retailer, manufacturer, and wholesale
7. Most foreign trade transaction are paid through the use of
(a) central bank cheques
(b) bank draft drawn by commercial banks on their foreign branches
(c) Irrevocable and confirmed letter of credit
(d) Letter of credit authenticated by the embassies of the respective countries.
8. The merger of two companies producing same type of produce is an example of
(a) vertical integration (b) Horizontal integration (c) Integral merger (d) An acquisition
9. Given
Opening stock 40,000
Purchases 115,000
Closing stock 60,000
Sales 250,000
What is the cost of goods sold? (a) N1 55,000 (b) N95,000 (c) N50,000 (d) N30,000
10. The business organization in which shareholders have equal votes is
(a) Sole proprietorship (b) Partnership (c) Cooperative (d) Limited liability company
11. One type of investment that has a variable income is
(a) Debentures (b) Preferred shares (c) Government bonds (d) Ordinary shares

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12. A public limited company can raise long term loan through
(a)The capital market (b)The money market (c) Bank draft (d) Discount houses
13. Factorizing is a trade debt term used when the agents buys all the trade debts of the
(a) Importer (b) Exporter (c) Nations (d) customers
14. Stevedores as a term in foreign trade means men who
(a) inspect goods in the ships (b)Import goods by ships
(c) Collect duties (d) Load and unload ships
15. A close indent is an instruction to an agent to
(a)Order goods from a particular manufacturer
(b)Order goods from any manufacturer
(c)sell goods in any form
(d) Sell goods to a certain firm
16. Profit expressed as a percentage of the cost of good is referred to as
(a) margin (b)markup (c) gain percentage (d)gross profit
17. The main advantage of a sole trader is its freedom to
(a) employ anyone he likes
(b)seek advice from any source
(c)take quick decision
(d) Plough all the profit into the business
18. In the case of voluntary liquidation of a business, the receiver is appointed by
(a) Creditors (b)Debtor (c) Director (d)Shareholder
19. When a company was more of loans than equity to finance its business, the company is said to be
(a) Bankrupt (b)Solvent (c)Highly geared (d)In a strong position
20. Right issue means the
(a) Issue of shares to the directors of company on favourable firms
(b)issue of shares of a company only to the founders of the company
(c)Right of shareholders to vote on any issue
(d) Issue of shares to shareholders on favourable terms
21. A term which indicates that a share is temporarily suspended is
(a) ex-dividend (b) un-dividend (c)bond (d) Stock
22. Excise duties are paid on goods that are
(a) Imported into the country
(b)manufactured within the country
(c)exported to other countries
(d)Kept in bonded warehouse.
23. The practice by which an insurance company accepts a very large risk and later shares it with other insurance company is called (a) subrogation (b)contribution (c)re-insurance (d)indemnity
24. Goods imported to a country for the purpose of re- exporting attracts a rebate known as
(a)customer drawback (b)export royalty (c)incentive (d)export rebate
25. The nominal value of a share as specified in the memorandum of Association and the share certificate is the
(a) Discounted value (b)Stock value (c) Face value (d)Par value

ANSWER KEY

1. B 6. C 2. C 7.A 3. B 8. B
11 C 16 B 21 A 12 A. 17 C 22 D
13 D 18 A 23 B 4 A 9. B 5. B 10 C
14 B 19A 15 A 20 B 24 A 25 C

GENERAL KNOWLEDGE

UNIVERSITY OF JOS, 2010 POST UME TEST

1. Democracy day is celebrated in Nigeria on (a) Oct., 1 (b) Jan. 12 (c) May 29 (d) June
2. The first Africa country to host FIFA world cup is (a) Nigeria (b) Egypt (c) Morocco (d) South Africa
3. How many members make up house of Representative in Nigeria? (a)270 (b) 109 (c) 360 (d) 359
4. How many members make up senate in the upper arm of the house of assembly? (a) 100 (b) 108 (c) 109 (d) 110
5. Into how many geopolitical zone is Nigeria divided? (a) 4 (b)5 (c) 6 (d) 7
6. After recapitalization of banks in Nigeria, the number of banks become (a)21 (b) 22 (c) 25 (d) 24
7. Abuja became Nigeria Federal capital territory in (a) 1991 (b) 1990 (c) 1989 (d) 1988
8. The motion for self governance was moved in Nigeria by (a) Chief Anthony Enaoro (b) Dr. Nnamdi Azikwe (c) Chief Obafemi Awolowo (d) Aihaji Tafawa Balewa.
9. The newest state country in Africa is (a) Malawi (b) South Africa (c) Southern Sudan (d) Sharawa Republic
10. When was Hosen Mubarak of EGYPT removed from office as president? (a) Jan 2011 (b) Feb. 2011 (c) March, 2011 (d) April , 2011
11. The first civilian president that died in office in Nigeria is (a) Sir Tafawa Balewa (b) Gen. Aguyi Ironsi (c) Gen Murtala Muhammed (d) Aihaji Umar Yar'adua
12. Millenium development goals was grouped into how many points? (a) 6 (b)7 (c) 8 (d) 9
13. Who was the first Military head of state in Nigeria?
(a)Gen. Olusegun Obasanjo
(b) Gen Muritala Muhammed
(c) Gen. Aguiyi Ironsi
(d) Gen Ibrahim Babangida
14. Umar Musa Yar'dua governance was anchored on (a) 8 point agenda (b) 7 points agenda (c) 6 point agenda (d) 10 point agenda
15. How many local government is in Nigeria?
(a) 774 (b) 744 (c) 784 (d) 794
- 16 Who is the First female president in Africa?
(a) Hon. Olubunmi Ette (b) Chief (Mrs) Funmilayo Kuti (c) Dr.(Mrs) Ngozi Ewenla (d) Mrs Ellen Johnson Sirleaf
17. Nigeria flag was designed by (a) Mr Ama Onabolu (b) Prof Wole Soyinka (c) Prof Chinua Achiebe (d) Mr Taiwo Akinkunmi.
18. 2010 CAF African footballer of the is awarded to (a) Samuel E'to of Cameroum (b) Dj Drogba of Cote Divore (c) Mikel Obi of Nigeria (d) Gyan of Ghana.
19. What is the currency of India? (a) Rupees (b) Dollar (c) Pounds sterling (c) Cfan (d) Naira.
20. Coal is mined in in Nigeria. (a) los (b) Enugu (c) Oloibiri (d) Igbeti.

ANSWER KEY

1C 6 C 11 D 16 D 2D 7 A

12 C 17 D 3.C 8 A 13 C 18 A

4C 9 C 14 B 19 A 5C 10D 15 A 20 B

SECTION B

1. What natural product has been used as means of exchange long time? (a) money (b) Dollar (c) Salt (d) Cowry

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2. How many of the earth surface in percentage is covered with water? (a) 10% (b) 29% (c) 50% (d) 71%
3. How much of the earth surface (including the rocks, mountain, valley and other physical features) in percentage is covered with land? (a) 10% (b) 29% (c) 50% (d) 71%
4. What is the smallest planet in our solar system called? (a) mercury (b) mars (c) Venus (d) earth
5. Which language is spoken in Sicily? (a) Greece (b) Washington D.C (c) United Kingdom
12. How many edge has a cube? (a) 4 (b) 9 (c) 12 (d) 16
13. Which continent has the coldest climate? (a) Antarctica (b) Africa (c) Europe (d) Asia
14. Which mountain range separate Europe from Asia? (a) The Himalayas (b) Everest (c) The Ural (d) Urals
15. What does the word "EMIR" means? (a) king (b) royalty (c) Prince in Arabic (d) Throne
16. Which channel connect the Atlantic ocean with the Pacific ocean?
(a) Panama channel (b) Panama channel (c) Panama channel (d) Panama channel
17. When was telephone first invented? (a) 1860 (b) 1861 (c) 1862 (d) 1862
18. Who invented the first telephone? (a) Charles Darwin (b) Phillip Reis (c) Einstein (d) Michael Faraday
19. Cairo is the capital of which country. (a) Morocco (b) Egypt (c) Tunisia (d) Libya
20. Lima is the capital of which country (a) Peru (b) China (c) Chile (d) Mexico
21. Barometer is used to measure
(a) the atmospheric air (b) the atmospheric pressure (c) temperature (d) volume
22. At which temperature will pure water be transformed to steam (a) 90° C (b) 100° C (c) 110° (d) 115° C
23. What is a skyscraper? (a) a mountain (b) a bird (c) a very high building (d) a tall tree
24. Which is the smallest continent? (a) Australia (b) Africa (c) Arctic & Antarctica (d) Africa
25. Which of the following gases is used to fill balloon? (a) Oxygen (b) carbon dioxide (c) Helium (d) Nitrogen
26. The election into the National assembly, already scheduled to hold on the 2 April, 2011 was shifted to
(a) 4 April (b) 5th April (c) 7th April (d) 9th April
27. Dr. Goodluck Jonathan was sworn in as the acting president in Nigeria on the
(a) 10th Feb., 2010 (b) 11th Feb., 2010 (c) 12th Feb., 2010 (d) 13th Feb., 2010
28. Which country is hosting 2014 world cup? (a) USA (b) Argentina (c) Brazil (d) Germany
29. Who is the INEC chairman for the 2011 general election?
(a) Prof. Maurice Iwu (b) Prof Wole Soyinka (c) Prof Attairu Jega (d) Prof Chinua Achibe
30. Who was the senate president from June 2007 to June 2011 in Nigeria upper legislative chamber?
(a) David Mark (b) Spanish (c) Italian (d) Latin
6. What is the name of the famous mountain in Rio de Janeiro! Brazil
(a) Sugar loaf mountain (b) Sugar loaf mountain (c) Sugar loaf mountain (d) Sugar loaf mountain
7. What is the speed of light? (a) 3×10^9 m/s (b) 3×10^8 m/s (c) 3×10^5 m/s (d) 3×10^6 m/s
8. Which continent is largest on earth? (a) Africa (b) Europe (c) Asia (d) Australia
9. How many months of the year have 31 days? (a) 6 (b) 7 (c) 8 (d) 9
10. What are people who do not eat protein from animal called? (a) Omnivorous (b) Carnivorous (c) vegetarian (d) vegetarians
11. From where is the Olympic fire sent out to the Olympic games every 4 years?
(a) Abuja (b) Greece (c) Washington D.C (d) United Kingdom
12. How many edge has a cube? (a) 4 (b) 9 (c) 12 (d) 16

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30. Who was the senate president from June 2007 to june 2011 in Nigeria upper legislative chamber?
(a) David Mark (b) Dimeji Bankole (c) Ike Ekeremadu (d) Alhaji Nafada

ANSWER KEY

- 1C 6 B 11 B 16 B 21 B 20
7 B 12 C 17 B 22 B 3.B 8 C
13 A 18 B 23C 4A 9 B 14 C
19 B 24A 5C 1D 15C 20 A
25 C 26D 27C 28 C 29 C 30A

SECTION C

1. The vice-president in Nigeria between 1979-1983 is
(a) Dr. Joseph Wayas (b) Dr. Alex Ekwueme (c) Aihaji bashiru Tofa (d) Chief M.K.O Abiola
2. A principle that advocate total equality of members of a society is called.....
(a)Communalism (b) egalitarianism (c) Totalitarianism (d) Oligarcy
3. The governor of o1i western region who died in a military coupwith the visiting head of state in 1966 was
(a) Lt. Col. B. S. Dimka (b) Col. Shittu Alao (c) Lt. Col. Adekunle Fajuyi (d) Col. Ibrahim Taiwo
4. The popular means of transportation during the trans-Sahara trade was the (a) donkey (b) horse (c) camel (d) mule
5. Which was the general purpose currency in pre-colonial Nigeria?
(a) cloth (b) salt (c) copper (d) cowry
6. General Murtala Muhammad was assassinated in a coup led by

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- (a) Lt. Col. Kaduna Nzeogwu (b) Col. Joe Garba (c) Lt.Col. B .S. Dimka (d) Major Gideon Orkar
7. The twenty one state structure came into being in Nigeria during the rule of
(a) Gen. Murtala Muhammad (b) Major Gen. Aguiyi Ironsi (c) Gen. Olusegun Obasanjo (d) Gen. Ibrahim Babangida
8. The colony of Lagos and protectorate of southern Nigeria were amalgamated to become the colony and protectorate of southern Nigeria in... (a) May 1900 (b) May 1902 (c) May 1905 (d) May 1906
9. The first African and only Nigerian to win nobel prize in Literature is
(a) Prof.Chinua Achebe (b) Chris Okigbo (c) Prof. Wole Soyinka (d) Prof. Akin wumi Ishola
10. How many Rivers is in Africa?. (a) 6 (b) 7 (c)8 (d) 9
11. Civil war broke out in Nigeria on (a) Jan., 1967 (b) Feb., 1967 (c) May, 1967 (d) July, 1967
12. What is the third planet of the solar system? (a) mercury (b) Mars (c) earth (d) venus
13. The solar system is made up of how many planets. (a) 10 (b) 9 (c) 8 (d) 7
14. What is the capital of Gombe state in Nigeria? (a) Goje (b) Gombe (c) Dutse (d) Damaturu
15. When was Ekiti state established? (a) 1990 (b) 1991 (c) 1995 (d) 1996
16. According to 2006 Censure, which state is the most populous in Nigeria?
(a) Oyo (b) Kano (c) Lagos (d) Kaduna
17. Where is marble mined in Oyo state? (a) Igbeti (b) Igboho (c) Iseyin (d) Ogbomoso
18. Which of these is a tourist centre in Ogunstate?
(a) Ogbudu cattle Ranch (b) Ikogusi water fall (c) Olumo Rock (d) Gurara water fall
19. Nigeria is boundaried in the North by which of the following countries.
(a) Cotonue (b)Ghana (c) Cameroum (d) Niger
20. The first election in Nigeria was held in the year (a) 1914 (b) 1922 (c) 1948 (d) 1960

ANSWER KEY

1B 6 C 11 D 16 B 2B 7A

12 C 17 A 3.C 8 D 13 B 18C

4C 9 C 14 B 19 D 5D 10B

15 D 20 B

SECTION D

1. River Niger takes its source from
(a) Mountain Everest (b) Filta Jaulo (c) Climanjaro (d) Olumo rock
2. From which country does River Niger takes its source?
(a) Ghana (b) Niger (c) Cote D'ivore (d) Guinea
3. How many days make a leap year? (a) 362 (b) 364 (c) 365 (d) 366
4. How many hours does it take for the earth to rotate on its own axis?
(a) 7 hr (b) 12 Hr (c) 24 hr (d) 36 hr
5. The last eclipse of the sun in Nigeria was observed on
(a) 29t1 march.2006 (b) 28th march, 2006 (c) 30th march, 2006 (d) 27tl march, 2006
6. Dr. Goodluck Jonathan was sworn in as executive president on
(a) 1 May, 2010 (b) 2 May, 2010 (c) 5th May, 2010 (d) 6th May, 2010
7. Aihaji Umar Yar'adua died in office on....
(a) l May, 2010 (b) 2lId May, 2010 (c) 5th May, 2010 (d) 6th May, 2010
8. The first country to withness Oyster in North- Africa in 2011 is
(a) Egypt (b) Tunisia (c) Libya (d) Morroco
9. The first multi-storey building in Nigeria was built in
(a) Lagos (b) Abuja (c) Kano (d) Ibadan
10. The Premier University college was established in Nigeria in the year.
(a) 1960 (b)1947 (c) 1948 (d) 1949
11. The first television station in Africa, WNTV, was established in the year

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- (a) 1959 (b) 1960 (c) 1963 (d) 1966
12. Who stopped the killing of twins in Calabar?
(a) Henry Townsend (b) Mary Slessor (c) Mongo Park (d) Herbert Marculey
13. English language Bible was translated to Yoruba Language by...
(a) Bishop Adhlakun (b) Bishop Finn (c) Bishop Ajayi Crowther (d) Cannon Sunday Makinde
- 14 Is referred to as confluence town in Nigeria. (a) Lokoja (b) Lagos (c) Port Harcourt (d) Abuja
15. Nigeria is boundaried in the south with
(a) Pacific ocean (b) Atlantic ocean (c) Red sea (d) Artic & Antartic
16. How many political parties participated in the 2011 general election? (a) 62 (b) 63 (c) 64 (d) 65
- 17 is the leader of the first military coup in Nigeria.
(a) Col. Emeka Ojukwu (b) Major Chukwuma Nzeogwu (c) Gen. Olusegun Obasanjo (d) Gen Yakubu Gowon
18. The basis for Nigeria's membership of the commonwealth is
(a) She was a former colony of Britain
(b) She was a leading opponent of Apartheid in South Africa
(c) She is the most populous black nation
(d) She provides athletes for the common wealth.
19. Which of the following is not an interest group?
(a) Christian Association of Nigeria
(b) Nigerian Medical Association
(c) Catholic church
(d) Pentecostal fellowship of Nigeria
20. A legislative debate or proceeding which is attended by all members of the house is called
(a) Plenary session (b) Recess session (c) committee stage! Session (d) Third Reading session

ANSWER KEY

1 B 6D 11A 16B 2D 7 C
12B 17B 3.D 4B 13C 18A
4C 9 D 14A 19C 5A 11D
15D 20A

SECTION E

1. During the period of 1960-1966, Nigeria was governed under the:
(a) Presidential system of government
(b) West minister system of Government
(c) Con –federal system of government
(d) Unitary system of government
2. Which of the following in the Sokoto caliphate performed functions similar to that of the Bashorun in Oyo kingdom? (a) Waziri (b) Galadima (c) Ma'aji (d) Alkali
3. In the Igbo political system, the most senior member of the council of elder is the
(a) Okpara (b) Obi (c) Eze (d) Ofo
4. Herbert Macaulay was the first president of (a) NCNC (b) AG (c) UMPC (d) NEPU
5. Equality before the law is a component of
(a) Separation of power (b) checks and balances (c) The rule of law (d) constitutional law
6. Adolf Hitler is to Nazism as Benito Mussolin is to (a) Feudalism (b) communism (c) Fascism (d) Socialism
7. Nigeria became a republic on
(a) May 29, 1999 (b) Oct. 1, 1960 (c) Jan. 15, 1966 (d) Oct. 1, 1963
8. The Economic Community of West Africa states was established in

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- (a) May 1975 (b) May 1963 (c) May 1966 (d) May 1996
9. The first Indigenous Governor —General of Nigeria is
(a) Donald Cameron (b) Sir Ames Robertson (c) Sir AdesojiAderemi (d) Rt. Hon. Nnamdi Azikwe
10. Free-Education was introduced in western Region by which of these Premier?
(a) Chief Obafemi Awolowo (b) Chief S. L Akintola (c) Chief Michael Adegunle Ajasin (d) Chief Bola Ige
11. The EFCC was established to
(a) Arrest & try corrupt politician
(b) Combat economic and financial crimes in Nigeria
(c) Arrest, detain & prosecute corrupt state governors and legislators
(d) Assist the world in monitoring economic project in Nigeria
12. In many countries, citizenship can be acquired through the following process except
(a) Nationalization (b) Naturalization (c) Registration (d) Birth
13. The following are Anglophone West Africa countries except
(a) Ghana (b) Nigeria (c)Kenya (d) The Gambia
14. Every political system performs the following basic function except
(a) Rule making (b) Rule transformation (c) Rule enforcement (d) Rule adjudication
15. The amalgamation of the Northern and Southern protectorates and the colony of Lagos was in
(a) 1960 (b) 1966 (c) 1963 (d) 1914
16. Globalization is all but except one of these . . .
(a) A renewed concept in international studies
(b) Limited to the west
(c) A process of making the world smaller
(d) An increasing integration of the world
17. The centenary anniversary of the amalgamation of Northern and Southern Nigeria will be established in
(a) 2060 (b) 2066 (c) 2064 (d) 2014
18. The second military coup deta' tin Nigeria took place on
(a) Jan. 15, 1966 (b) Oct. 1, 1966 (c) July 29, 1966 (d) July 29, 1975
19. The idea of democracy stated with the (a) Romans (b) British (c) Greeks (d) Egyptian
20. The first political party in Nigeria was established in (a) 1923 (b) 1922 (c)1951 (d) 1979
22. Under the military regime in Nigeria, state enactment are known as
(a) laws (b) decrees (c) edicts (d) promulgation (e) proportion
23. The motto of Boys' Scout is
(a) be faithful (b) be prepared (c) be inspired (d) be serious (e) be helpful
24. Which state is referred to as 'power state?'
(a) Bayelsa (b) Delta (c) Niger (d) Federal capital territory (e) Kaduna.

ANSWER KEY

1 B 6 C 11 B 16 B 21 B 2 A
7 D 12 C 17 D 22 B 3. D 8 A
13 C 18 C 23 B 4 A 9 C 14C
19 C 24 C 5 C 10A 15 D 20 B

PHYSICS

UNIVERSITY OF JOS 2006 POST UME TEST

1. A 70kg man ascends a flight of stairs of height 4m in 7s. The power expended by the man is
(a) 40W (b) 100W (c) 280W (d) 400W
2. A body accelerates uniformly from rest at 6ms^{-2} for 8seconds and then decelerates uniformly to rest in the next 5

seconds. The magnitude of the deceleration is:

- (a) 9.6ms^{-2} (b) 48ms^{-2} (c) 24.0ms^{-2} (d) 39.4ms^{-2}

3. A nail is pulled from a wall with a string tied to the nail. If the string is inclined at an angle of 30° to the wall and

the tension in the string is 50N , the effective force used in pulling the nail is

- (a) 25N (b) $25\sqrt{3}\text{N}$ (c) 50N (d) $50\sqrt{3}\text{N}$

4. If M and R are the mass and radius of the earth respectively and G is the universal gravitational constant, the

earth's gravitational potential at an altitude H above the ground level is:

- (a) GM/H (b) $GM/(R+H)$ (c) $GM/2H$ (d) $GM/(R-H)$

5. Which of the following statement is not true:

- (a) As the slope of an inclined plane increases, the velocity ratio decreases.

Acceleration due to gravity $g = 9.8\text{m/s}^2$ Gas constant $R = 8.31\text{J/mol.K}$

Speed of light in vacuum, $c = 3.0 \times 10^8\text{m/s}$ Planck constant, $h = 6.63 \times 10^{-34}\text{J.s}$

- (b) The efficiency of an inclined plane decreases as the slope increases.

- (c) The effort required to push a given load up an inclined plane increases as the slope increases.

- (d) The mechanical advantage of a smooth inclined plane depends on the ratio of the length of the height of the

plane.

6. The ice and steam points of a thermometer are 20mm and 100mm respectively. A temperature of 75°C

corresponds to $Y\text{mm}$ on the thermometer. What is Y ?

- (a) 100mm (b) 70mm (c) 80mm (d) 60mm

7. An electric kettle with negligible heat capacity is rated at 2000W . If 2.0kg of water is put in it, how long will take

temperature of water to rise from 20°C to 100°C ? [Specific heat capacity of water $4200\text{J Kg}^{-1}\text{K}^{-1}$]

- (a) 336s (b) 420s (c) 168s (d) 84s

8. A quantity of ice at 10°C is heated until the temperature of the heating vessel is 90°C . Which of the following

constants is NOT required to determine the quantity of heat supplied to the vessel?

- (a) Specific latent heat of Vaporization front of a biconvex

- (b) Specific heat capacity of ice.

- (c) Specific latent heat of fusion.

- (d) Specific heat capacity of water

9. The scent from a jar of perfume opened in one corner of a room is picked up in another part of the room. The

perfume moves through the air molecules; (a) Evaporation (b) Osmosis (c) Diffusion (d)

Convection

10. An object of height 3.00cm is placed 10cm in front of a lens of focal length 15cm . The image of the object is

- (a) Real and 3.00cm tall

- (b) Virtual and 3.00cm tall

- (c) Virtual and 9.00cm tall

- (d) Real and 9.00cm tall

In the diagram above, P , Q and R are vectors. Which of the following options gives the correct relationship between

the vectors?

11) A convex lens of focal length 10.0cm is used to form a real image which is half the size of the object. How far

from the object is the image?

(a) 45cm (b) 30cm (c) 15cm (d) 20cm

12. A diverging lens of focal length 20cm forms an image half of the size of the object. What is the object distance?

(a) 11.11cm (b) 100cm (c) 60cm (d) 8.71cm

13. An object of height 3.00cm is placed 10cm in front of a biconvex lens of focal length 15cm. The image of the object is

(a) Real and 3.00cm tall

(b) Virtual and 3.00cm tall

(c) Virtual and 9.00cm tall

(d) Real and 9.00cm tall

14. The most suitable type of mirror used for the construction of a searchlight is the:

(a) Concave mirror

(b) Convex mirror

(c) Spherical mirror

(d) Parabolic mirror

15. Light waves and ripples of water are similar because both

(a) are longitudinal waves

(b) have the same velocity

(c) can be diffracted and refracted

(d) have the same frequency

16. Three 4- Ω resistors were connected in series by 'Tola while Ade connected the same set of resistors in parallel.

The ratio of the value obtained by Ade to that obtained by 'Tola is (a) 1:2 (b) 1:9 (c) 1:10 (d) 1:5

17. Three resistors are connected as shown in the diagram below. The equivalent resistance between points X and Y is

18. A coil of copper wire of N turns is kept rotating between the poles of a permanent magnet such that the magnetic

flux linking the coil changes continuously. Which of the following statements is TRUE?

a) An emf is induced in the coil such that when the change of flux is positive the emf is positive, and when the change of flux is negative, the emf is negative.

b) An emf is induced in the coil whose magnitude is inversely proportional to both the number of turns in the coil and the rate of change of magnetic flux.

c) An emf is set up in the permanent magnet which reduces the flux in the coil to zero.

d) A current flows in the coil and an emf is set up proportional to both the rate of change of the flux and the number of turns.

19. What is the equivalent capacitance between points A and B in the diagram below?

20. The principle of operation of an induction coil is based on

(a) Ohm's law (b) Ampere's law (c) Faraday's law (d) Coulomb's law

21. The equation represents

(a) α -decay (b) n -decay (c) γ -decay (d) photon emission

22. Which of the following radiations cannot be deflected by an electric field or a magnetic field?

(a) α -rays (ii) β -rays (iii) γ -rays (iv) X-rays

(b) (i) and (ii) only

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(c) (iii) and (iv) only

(d) (i) and (iii) only

23. The half-life of a radioactive element is 9 days. What fraction of atoms has decayed in 36 days?

(a) $\frac{1}{16}$ (b) $\frac{1}{4}$, (c) $\frac{1}{2}$ (d) $\frac{3}{4}$

EXPLANATION TO ANSWERS

1. Power is the rate of doing work or expending energy. It is represented as Power,

$P = \frac{\text{Work done}}{\text{Time}} = \frac{\text{Force} \times \text{Distance}}{\text{Time}}$

The effective force pulling on the nail is resolved perpendicular to the wall.

5. Efficiency of inclined plane depends on how rough the surface of the inclined plane is and not on the slope (13)

8. (A) — Specific latent heat of vapourification of a substance is the quantity of heat required to change unit mass of

the substances from liquid to the vapour state at the same temperature. In this case, the temperature of heating

vessel is 90°C which is below 100°C , the temperature at which water can vapourise.

9. (C) — Diffusion describes the movement of solute particles through a medium from a region of higher

concentration to a region of lower concentration. Diffusion is fastest in gaseous because gas molecules have more

kinetic energy than particles in solid and liquids state and the rate of diffusion of gases is affected by their densities.

10. B

12. $f = -20\text{cm}$ (Negative focal length because divergent lens always produce virtual image, so V is also negative)

16. Image height = 9cm

Image of object is vertical ($V = -30\text{cm}$) & 9cm tall

14. Spherical concave mirrors are therefore not used as car headlamp or as searchlight because they do not provide a

parallel beam of constant intensity, so PARABOLIC mirror is used (D)

15. (C) — Light waves and water can be Reflected and Diffracted.

20. In 1831, after experiments extending over a period of several years,

Michael Faraday discovered that a momentary current existed in a circuit whenever the current in a nearby circuit

was being started

UNIVERSITY OF JOS 2008 POST UME TEST

PHYSICS

1. Calculate the length of a displaced pendulum bob that passes its lowest point twice every second [$g = 10\text{ms}^{-2}$]

(a) 1.000m (b) 0.253m (c) 0.450m (d) 0.58m

2. A vehicle of mass m is driven by an engine of power P from rest. Find the minimum time it will take to acquire a speed v .

3. When a ball rolls on a smooth level ground, the motion of its centre is

(a) translational (b) random (c) oscillatory (d) rotational

4. A body accelerates uniformly from rest at 6ms^{-2} for 8 seconds and then decelerates uniformly to rest in the next

5 seconds. The magnitude of the deceleration is:

(a) 9.6ms^{-2} (b) 48ms^{-2} (c) 24.0ms^{-2} (d) 39.4ms^{-2}

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5. A nail is pulled from a wall with a string tied to the nail. If the string is inclined at an angle of 30° to the wall and the tension in the string is 50N, the effective force used in pulling the nail is.
6. A box of mass 40kg is being dragged along by a rope inclined at 60° to the horizontal. The frictional force between the box and the floor is 100N and the tension on the rope is 300N. How much work is done in dragging the box through a distance of 4m? (a) 680J (b) 200J (c) 1001 (d) 400J
7. A 70kg man ascends a flight of stairs of height 4m in 7s. The power expended by the man is: (a) 40W (b) 100W (c) 280W (d) 400W
8. Which of the following statements is not true?
(a) As the slope of an inclined plane increases, the velocity ratio decreases.
(b) The efficiency of an inclined plane decreases as the slope increases.
(c) The effort required to push a given load up an inclined plane increases as the slope increases.
(d) The mechanical advantage of a smooth inclined plane depends on the ratio of the length of the plane.
- In the diagram above, P, Q and R are vectors. Which of the following options gives the correct relationship between the vectors?
10. If M and R are the mass and radius of the earth respectively, and G is the universal gravitational constant, the earth's gravitational potential at an altitude H above the ground level is
(a) $-GM/H$ (b) $-GM/(R+h)$ (c) $-GM/2H$ (d) $-GM/(R-H)$
11. The ice and steam points of a thermometer are 20mm and 100mm respectively. A temperature of 75°C corresponds to Ymm on the thermometer. What is Y?
(a) 100mm (b) 70mm (c) 80mm (d) 60mm
12. An electric kettle with negligible heat is rated at 2000W. If 2.0kg of water is put in it, how long will take temperature of water to rise from 20° to 100° ? [specific heat capacity of water = $4200\text{Jkg}^{-1}\text{K}^{-1}$]
(a) 336s (b) 420s (c) 168s (d) 84s
13. A quantity of ice at -10°C is heated until the temperature of the heating vessel is 90°C . Which of the following constants is NOT required to determine the quantity of heat supplied to the vessel?
(a) specific latent heat of vaporization
(b) specific heat capacity of ice
(c) specific latent heat of fusion
(d) specific heat capacity of water
14. The scent from a jar of perfume opened in one corner of a room is picked up in another part of the room. The perfume moves through the air molecules by (a) Evaporation (b) Osmosis (c) Diffusion (d) Convection
15. A convex lens of focal length 10.0cm is used to form a real image which is half the size of the object. How far from the object is the image? (a) 45cm (b) 30cm (c) 15cm (d) 20cm
16. A diverging lens of focal length 20cm forms an image halve of the size of the object. What is the object distance?
(a) 11.11cm (b) 100cm (c) 60cm (d) 8.71cm

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17. An object of height 3.00cm is placed 10cm in front of a biconvex lens of focal length 15cm. The image of the object is

- (a) real and 3.00cm tall
- (b) virtual and 3.00cm tall
- (c) virtual and 9.00cm tall
- (d) real and 9.00cm tall

18. The most suitable type of mirror used for the construction of a searchlight is the:

- (a) concave mirror
- (b) spherical mirror
- (c) convex mirror
- (d) parabolic mirror

19. Light waves and ripples of water are similar because both

- (a) are longitudinal waves
- (b) can be diffracted and refracted
- (c) have the same velocity
- (d) have the same frequency

20. Three 4- Ω resistors were connected in series by 'Tola while Ade connected the same set of resistors in parallel.

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21. Three resistors are connected as shown in the diagram below. The equivalent resistance between points X and Y is

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- (c) An emf is set up in the permanent magnet which reduces the flux in the coil to zero.
- (d) A current flows in the coil and an emf is set up proportional to both the rate of change of the flux and the number of turns.

23. What is the equivalent capacitance between points A and B in the diagram below?

24. The principle of operation of an induction coil is based on

- (a) Ohm's law (b) Ampere's law (c) Faraday's law (d) Coulomb's law

25. The half-life of a radioactive element is 9 days. What fraction of atoms has decayed in 36 days?

- (a) $\frac{1}{16}$ (b) $\frac{1}{3}$ (c) $\frac{1}{4}$ (d) $\frac{1}{6}$

26. Which of the following radiations cannot be deflected by an electric field or a magnetic field? (a) i. α -rays (ii) β -rays (iii) γ -rays (iv) X-rays (b) (i) and (ii) only (c) (iii) and (iv) only (d) (i) and (iii) only

1. (A) — 1'ranslational motion is when a rigid body moves in space without rotating, represents

- (a) i. α -decay (b) β -decay (c) γ -decay (d) photon emission

5. The effective force pulling on the nail is resolved perpendicular to the wall = $T \sin 30^\circ = 50 \times \frac{1}{2} = 25\text{N}$
(A)

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8. (B) — The efficiency of inclined plane depend on how rough the surface of the inclined plane is and not on the slope.

12. Heat supplied by heater = heat gained by water

$$2000 \times t = 2 \times 4200 \times (373 - 293)$$

$$t = 336\text{secs (A)}$$

13. Check 2006 OAU Post-JAMB Question 8 (A)

14. C

15. See OAU 2006 Post-JAMB Question 11(A)

16. See OAU 2006 Post-JAMB Question 12

17. See OAU 2006 Post-JAMB Question 13 (D)

18. See OAU 2006 Post-JAMB Question 14 (D)

19. B

20. See OAU 2006 Post-JAMB Question 16 (B)

21. See OAU 2006 Post-JAMB Question 17 (A)

22. D

23. See OAU 2006 Post-JAMB Question 19 (B)

24. See OAU 2006 Post=JAMB Question 20 (C)

25. See OAU 2006 Post-JAMB Question 23 (D)

26. C

27. B

(a) 10/7m (b) 40m (c) 20m (d) 20/7m

UNIVERSITY OF JOS 2009 POST UME TEST

PHYSICS

1. The force with which an object is attracted to the earth is called

(a) Acceleration (b) Mass (c) Gravity (d) Impulse (e) Weight

2. The refractive index of a liquid is 1.5. If the velocity of light in a vacuum is $3.0 \times 10^8 \text{ms}^{-1}$, the velocity of light in the liquid is

(a) $1.5 \times 10^8 \text{ms}^{-1}$ (b) $2.0 \times 10^8 \text{ms}$ (c) $3.0 \times 10^8 \text{ms}$ (d) $4.5 \times 10^8 \text{ms}^{-1}$ (e) $9.0 \times 10^8 \text{ms}^{-1}$

3. A train has an initial velocity of 44m/s and an acceleration of -4m/s^2 . What is its velocity after 10seconds?

(a) 2m/s (b) 4m/s (c) 8m/s (d) 12m/s (e) 16m/s

4. A man of mass 50kg ascends a flight of stairs 5m high in 5 seconds. If acceleration due to gravity is 10ms^{-2} , the power expended is

(a) 100w (b) 300w (c) 250w (d) 400w (e) 500w

5. A machine has a velocity ratio of 5. If it requires a 50kg weight to overcome 200kg weight, the efficiency is

(a) 4% (b) 5% (c) 40% (d) 50% (e) 80%

6. If the force on a charge of 0.2 coulomb in an electric field is 4N, then the electric intensity of the field is

(a) 0.8 (b) 0.8N (c) 20.QN/C (d) 4.2N/C (e) 20.OC/N

7. The resistance of a wire depends on

(a) The length of the wire

(b) The diameter of the wire

(c) The temperature of the wire

(d) The resistivity of the wire

(e) All of the above

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8. Which of these is not contained in a dry cell?
- (a) carbon rod
 - (b) paste of magnesium dioxide
 - (c) paste of ammonium chloride
 - (d) Zinc case
 - (e) Copper rod
9. A simple pendulum 0.6m long has a period of 1.55. What is the period of a similar pendulum 0.4m long in the same direction?
10. A device that converts sound energy into electrical energy is
- (a) The horn of a motor car
 - (b) An AC generator
 - (c) A microphone
 - (d) The telephone earpiece
 - (e) A loud speaker
11. Radio wave has a velocity of $3 \times 10^8 \text{ms}^{-1}$. If a radio station sends out a broadcast on a frequency 800KHz, what is the wavelength to the broadcast?
- (a) 375.0m (b) 267.0m (c) 240.0m (d) 37.5m (e) 26.7m
12. Which of these is not a fundamental S.I. unit?
- (a) Metre (b) Ampere (c) Kelvin (d) Second (e) Radian
13. If two masses 40g and 60g respectively, are attached firmly to the end of a light metre rule, what is the centre of gravity of the system?
- (a) the mid point of the metre rule
 - (b) 40cm from the lighter mass
 - (c) 40cm from the heavier mass
 - (d) 60cm from the heavier mass
 - (e) indeterminate because the metre-rule is light
14. To find the depth of the sea, a ship sends out a sound wave and receives an echo after one second. If the velocity of sound in water is 1500m/s, what is the depth of the sea?
- (a) 0.75km (b) 1.50km (c) 2.20km (d) 3.00km (e) 3.75km
15. What is the number of neutrons in the Uranium isotope ^{238}U ?
- (a) 92 (b) 146 (c) 238 (d) 330 (e) 119
16. The mode of heat transfer which does not require material medium is
- (a) conduction (b) radiation (c) convection (d) propagation
17. The height at which the atmosphere ceases to exist is about 80km. If the atmospheric pressure on the ground level is 760mmHg, the pressure at a height of 20km above the ground level is
- (a) 380mmHg (b) 570mmHg (c) 190mmHg (d) 480mmHg
18. Which of the following is common to evaporation and boiling? They
- (a) take place at any temperature
 - (b) are surface phenomena
 - (c) involve change of state
 - (d) take place at a definite pressure
 - (e) None of the above

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19. Which of the following instrument has a pure tone?
(a) Guitar (b) Vibrating string (c) Turning fork (d) Screen (e) Horns
20. Four lenses are being considered for use as a microscope object. Which of the following focal lengths is most suitable? (a) -5mm (b) +5mm (c) -5cm (d) +5cm (e) -5.5mm
21. The product PV where P is pressure and V is volume has the same unit as
a) Force (b) power c) energy d) acceleration e) all of above
22. Two strings of the same length and under the same tension give notes of frequencies in the ratio 4:1 the masses of the strings are in the rates of a) 2:1 b) 1:2 c) 1:4 d) 17 e) 1:16
23. a household refrigerator is rated 200 watts. If electricity is rated watts. If electricity costs 5k per kwh, what is the cost of operating it for 20 days?
(a) N4.80 (b) N48.00 (c) N480.00 (d) N4800.00 (e) N240.00
24. The resistance of a 5m uniform wire of cross-sectional area of $0.2 \times 10^{-6} \text{ m}^2$

EXPLANATION TO ANSWERS

1. The force which we are in contact with in our daily lives is that which pulls us towards the earth, it is called Gravitational force — (c).
2. Refractive Index = Velocity of Light in Vacuum / Velocity of Light in the Liquid
Velocity of light in the liquid =
7. The resistance of a wire or rod is directly proportional to its length, and is inversely proportional to its cross-sectional area i.e. $R = \rho l/A$. The resistance of a metallic conductor generally increases with temperature. If the resistance is R_0 at 0°C and R at temperature T . Then $R = R_0(1 + \alpha T)$. The proportionality constant, R is called the resistivity of the material from which the wire is made (E).
8. In the dry cell, the electrolyte of wet leclanche cell is substituted with a powder or jelly-like material consisting of a mixture of starch and ammonium chloride. The zinc electrode is made into a can to contain the electrode. The carbon electrode is surrounded by a mixture of manganese oxide (depolarizer). Copper rod is not used in the dry cell (E).
9. In microphone, sound vibration impinging on the diaphragm cause slight vibration of the diaphragm. This brings about some change in the pressure on the carbon granule causing corresponding changes in the resistance of the circuit (C).
12. E
23. Total power consumed = $(200 \times 20 \times 24) / 1000 = 96 \text{ kWh} = 96 \text{ k Wh}$
Since 1KWh is one unit at 5k
Total cost = $96 \text{ kWh} \times 5 \text{ kobo} = 480 \text{ K} (\text{N}4.80 \text{ k})$ (A)
- 24 resistivity, $\rho = 1.8 \times 10^{-8} \text{ (A)}$
25. Complementary colour are two colours that will produce white colours when mixed together i.e blues plus yellow give white. It consists of a primary colour plus the secondary colour at the opposite side of the colour triangle (D).

UNIVERSITY OF JOS

2006 POST –UME SCREENING EXERCISE

MATHEMATICS

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1 A regular polygon have each of its number of sides of the polygon? (a) 36 (b) 9 (c) 18 (d) 20

2 A girl walks 30m from a point P on a bearing of 040° to a point Q. She then walks 30m on a bearing of 140° to a point

R. The bearing of R from P is (a) 90° (b) 50° (c) 45° (d) 40°

3 How many different three digit numbers can be formed using the integers 1 to 6 if no integer occurs twice in a

number? (a) 245 (b) 120 (c) 60 (d) 48

4 In how many different ways can the letters of the word geology be arranged in (a) 720 (b) 1260 (c) 25200 (d) 5040

5 A cyclist rode for 30 minutes at x km/h and due to a breakdown he has to push the bicycle for 2hrs at $x - 5$ km/hr. If

the total distance covered is less than 60km, what is the range of values for x ?

(a) $x < 14$ (b) $x < 20$ (c) $x < 29$ (d) $x < 28$

6 A businessman invested a total of N200, 000 in two companies which paid dividends of 5% and 7% respectively. If

he received a total of N11,600 as dividend, how much did he invest at 5%?

(a) N160,000 (b) N140,000 (c) N120,000 (d) N80,000

7 In a class, 37 students take at least one of chemistry, Economics and Government, 8 students take Chemistry, 19

take Economics and 25 take Government. 12 students take Economics and Government but nobody takes Chemistry

and Economics. How many students take both Chemistry and Government? (a) 3 (b) 4 (c) 5 (d) 6

8 Solve for p in the following equation given in base two: $11(p + 110) = 1001p$ (a) 10 (b) 11 (c) 110 (d) 111

9 Factorize $16(3x + 2y)^2 - 25(a + 2b)^2$.

(a) $10b(12x + 8y - 5a - 10b)(12x + 8y - 5a$

(b) $10b(12x + 8y - 5a - 10b)(12x + 8y + 5a +$

(c) $20(3x + 2y - a - 2b)(3x + 2y + a + 2b)$

(d) $20(3x + 2y + a + 2b)(3x + 2y + a + 2b)$

10 A cone has base radius 4cm and height 3cm. the area of its curved surface is

(a) $12\pi\text{cm}^2$ (b) $24\pi\text{cm}^2$ (c) $20\pi\text{cm}^2$ (d) $15\pi\text{cm}^2$

11 Let $\log y + 3 \log x = 3$, then, y is

(a) $(10/x)^2$ (b) $(x/10)^3$ (c) $(x/10)^{-3}$ (d) $(10/x)^{-1/3}$

12 If $x^2 - y^2 = 1$, then y is $a^2 b^2$

(a) $a^2 - a^2$ (b) $a^2 - x^2$

b^2

(c) $a^2 - a^2$ (d) $b^2 - x^2$

b^2

13. z is partly constant and partly varies inversely as the square of d . When $d = 1$, $z = 11$ and when $d = 2$, $z = 5$. Find

the value of z when $d = 4$ (a) 2 (b) 3.5 (c) 5 (d) 5.5

14 Expand the expression $(x^2 - 2x - 3)(x^2 + x + 1)$

(a) $x^4 - 4x^2 - 5x - 3$

(b) $-x^3 - 4x^2 + 5x - 3$

(c) $x^4 - x^3 - 4x^2 - 5x - 3$

(d) $x^4 - 4x^2 - 5x - 2$

Suppose we have matrices

$A = \begin{pmatrix} 1 & -1 \end{pmatrix}$ and $B = \begin{pmatrix} 0 & 2 \end{pmatrix}$

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2 3 4 3

15 find $A^2 + AB - 2A$

(a) 5 - 9 (b) -1 -4

2 3 8 7

(c) - 4 - 4 (d) 0 -4

12 13 -8 -6

16 The inverse of matrix B is

(a) 1 -3 2 (b) -3 2

8 4 0 4 0

(c) 1 3 - 4 (d) 1 0

8 -2 0 0 1

17 Find indefinite integral of the function $f(x) = x \cos x$ for any constant k, is

(a) $x \cos x + \sin x + k$

(b) $x \sin x - \cos x$

(c) $x \sin x + \cos x + k$

(d) $x \sin x - \cos x + k$

18 Evaluate the integral $\int_2^3 (x^2 + 1/x)dx$

(a) $8 + \ln 2$ (b) $7 + \ln 2$

3 3

(c) $7 - \ln 3$ (d) 8

3 3

19 The trigonometric expression $\cos 2A + \sin 2A$ can be written as

(a) $\cos A (\cos A - \sin A)$

(b) $\cos^2 A + \sin^2 A - 2\sin A \cos A$

(c) $2 \sin A \cos A + \cos^2 A + \sin^2 A$

(d) $\cos^2 A + \sin^2 A + \cos A$

Suppose D, E and P are subsets of a universal set U. U be the set of natural numbers no greater than 10, while D, E

and P are respectively the set of odd numbers, even numbers and prime numbers. For any set x, its complement \bar{x}

and O denote the empty set.

20 Display the set $D \cap P$. (a) {3,5,7} (b) {2} (c) {1,2,3,4,5,6,7,8,9,10} (d) O

A bag contain 10 balls of which 3 are red and 7 are white. Two balls are drawn at random. Find the probability of

none of the balls is red if the draw is.

22 With replacement: (a) 0.9 (b) 1 (c) 0.4 (d) 0.49

23 Without replacement: (a) 0.1 (b) 0.47 (c) 0.42 (d) 0.21

SOLUTION

1 Each angle of a regular polygon

$180^\circ (n-2)$

$160^\circ n = 180^\circ (n-2)$

$160^\circ n = 180^\circ n - 360^\circ$

$20^\circ n = 360^\circ$

$n = \frac{360^\circ}{20^\circ} = 18$

The number of sides of the polygon is 18 (C)

From the figure above, the bearing of R from P = $40^\circ +$

O

Triangle PQR in isosceles, $\therefore P = R$

$\therefore P = R = O$

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$$O = 180^\circ - 80^\circ = 100^\circ$$

$$2. \text{ The bearing of R from P } O = 40^\circ + 50^\circ = 90^\circ \text{ (A)}$$

$$3 \text{ The number of three digit numbers from integers 1 to 6} = 6P_3 = 6! = 6! = 120 \text{ (6-3)!} \text{ (B)}$$

$$4 \text{ Geology has 7 letters} = 7!$$

$$\text{'O' occurs twice} = 2!$$

$$\text{'G' occurs twice} = 2!$$

$$\therefore \text{ The different arrangement} = 7! = 1260 \text{ (B)}$$

$$2! \times 2!$$

5 Distance covered in the first part = speed x time taken

$$= x \times 30 = 1 \text{ xkm } 60 \text{ } 2$$

Distance covered in the second part = $2(x-5)$ km

$$\therefore 2(x-5) + x < 60$$

$$4x - 20 + x < 60 \rightarrow 5x < 80$$

$$x < 16 \text{ (D)}$$

6 Name the companies as A, B respectively

Let the amount invested in A = x with the dividend 5%

Then the amount invested in B = $200,000 - x$

$$\therefore 7\% \text{ of } (200,000 - x) + 5\% \text{ of } x = 11,600$$

$$0.07(200,000 - x) + 0.05x = 11,600$$

$$14,000 - 0.07x + 0.05x = 11,600$$

$$-0.02x = -2,400$$

$$x = 120,000$$

$$\therefore \text{ The amount invested in A} = \text{N}120,000 \text{ (C)}$$

$$7 \text{ n(C)} = 8 \text{ n(G)} = 25 \text{ n(E)} = 19$$

$$\text{Let n(C G)} = x$$

From the Venn diagram above

$$35 = 8x + x + 25 - (12 + x) + 12 + 7$$

$$35 = 40 - x$$

$$x = 5$$

$$\therefore 5 \text{ students take both chemistry \& government (C)}$$

$$8 \text{ } 11(p + 110) = 1001p$$

Note in base 2

Divide both sides by 11

$$p + 110 = 1001p = 11p$$

$$\therefore p + 110 = 11p$$

$$11p - p = 110 \rightarrow p = 11 \text{ (B)}$$

$$9 \text{ } 16(3x + 2y)^2 - 25(a + 2b)^2$$

$$= [4(3x+2y)]^2 - [5(a+2b)]^2$$

$$= [4(3x+2y-5(a+2b))]^2 [4(3x+2y) - 5(a+2b)]$$

$$= [12x-8y+5a-10b][12x+8y-5a-10b] \text{ (A)}$$

10 Curved surface area of a cone = πrl

$$12 = h^2 + r^2 = 3^2 + 4^2$$

$$l = \sqrt{25} = 5 \text{ cm}$$

$$\therefore \text{ C.S.A.} = \pi \times 4 \text{ cm} \times 5 \text{ cm}$$

$$= 20\pi \text{ cm}^2 \text{ (C)}$$

$$11 \log y + 3 \log x = 3$$

$$\log y + \log x^3 = x^3$$

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$$\log y = 3 - \log 3$$

$$\log_{10} y = \log_{10} 10^3 - \log_{10} 3$$

$$y = 10^3 \times (A)$$

$$12 x^2 - y^2 = 1$$

$$a^2 b^2$$

$$y^2 - x^2 - 1$$

$$b^2 a^2$$

$$y^2 - x^2 - a^2 y^2$$

$$b^2 a^2$$

$$b^2 (x^2 - a^2)$$

$$y^2 a^2$$

Taking the root of both sides

$$y = \sqrt{b^2 (x^2 - a^2)}$$

$$a^2$$

$$y = \sqrt{b^2 (x^2 - a^2)}$$

13 $z = k + c/d^2$ where k and c are constant, when $d =$

$$1, z = 11$$

$$11 = k + c \dots\dots\dots(i)$$

When $d = 2, z = 5$

$$5 = k + c$$

$$4$$

$$\therefore 20 = 4k + c \dots\dots(ii)$$

$$(ii) - (i)$$

$$9 = 3k$$

$\rightarrow k = 3$ then in (i)

$c = 11 - k = 11 - 3 = 8$ the connecting equation is

$$z = k + cd^2$$

$$z = 3 + 8/d^2 \text{ when } d = 4$$

$$z = 3 + 8 = 3 + 0.5$$

$$16$$

$$= 3.5 (B)$$

$$14 (x^2 - 2x - 3) (x^2 + x + 1)$$

$$= x^2 \cdot 9x^2/x + 1 \cdot 2x(x^2/x + 1) + 3(x^2/x + 1)$$

$$= x^4 + x^3 + x^2 - 2x^3 - 2x^2 - 2x - 3x^2 - 3x - 3$$

$$= x^4 - x^3 - 4x^2 - 5x - 3$$

$$15 A_2 = 1 -1 1 -1$$

$$2 3 2 3$$

$$19. \cos 2A + \sin 2A$$

$$\cos 2A = \cos^2 A - \sin^2 A$$

$$\sin 2A = 2 \sin A \cos A$$

$$\cos 2A + \sin 2A$$

$$= \cos^2 A + \sin^2 A + 2 \sin A \cos A (D)$$

$$20. D \cap P = \{3, 57\} (A)$$

$$21. D \cap E \cap O (D)$$

22. Pr (none of the balls is red)

$$\Pr(W_1 \times W_2)$$

$$= 7/7 \times 7/7 = 0.49 (D)$$

$$10/10$$

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23. $\Pr (W_1 \times W_{2/1}) = 7 \times 6 = 0.47$ (B)

10 10

UNIVERSITY OF JOS 2007 POST –UME SCREENING EXERCISE

MATHEMATICS

- 1 the interior angles of a pentagon (a) 75° (b) 108° (c) 120° (d) 134°
2. All the vertices of an isosceles triangle lie on a circle and each of the base angles of the triangle is 65° . The angle subtended at the centre of the circle by the base of the triangle is:
(a) 130° (b) 115° (c) 100° (d) 65°
3. A square tile measures 20cm by 20cm. How many of such tiles will cover a floor measuring 5m by 4m?
(a) 500 (b) 400 (c) 320 (d) 250
4. The volume of a certain sphere is numerically equal to twice its surface area. The diameter of the sphere is:
(a) 6 (b) 9 (c) 12 (d) \sqrt{v}
5. A bearing of 310° , expressed as a compass bearing is:
(a) N 50° W (b) N 40° W (c) S 40° W (d) S 50° W
6. Which of the following specified sets of data is not necessarily sufficient for the construction of a triangle?
(a) three angles
(b) two sides and a right angle
(c) two sides and an included angle
(d) three sides
7. The average age of the three children in a family is 9 years. If the average age of their parent is 39 years, the average age of the whole family is: (a) 20years (b) 21 years (c) 24 years (d) 27 years
10. Evaluate x in base 3 if $41 - 22 = 17$ (a) 11 (b) 8 (c) 12 (d) 22
11. A woman buys 4 bags of rice for ₦56 per bag and 3 bags of beans for ₦26 per bag using the currency "LONI" (L) in base 7. What is the total cost of the items in another currency "MONI" (M) in base 8?
(a) M224 (b) M14 (c) N340 (d) M440
12. When the price of egg was raised by ₦2 an egg, the number of eggs which can be bought for ₦120 is reduced by
(a) 5 (b) 6 (c) 7 (d) 8
13. How long will it take a sum of money invested at 8% simple interest to double the original sum?
(a) 8 years (b) 10.5 years (c) 12 years (d) 12.5 years
14. The journey from Lagos to Ibadan usually takes motorist 1 hour 3 minutes. By increasing his average speed by 20km/hr, the motorist saves 15 minutes. His usual speed, in km/hr is
(a) 100 (b) 90 (c) 85 (d) 80
15. The smallest section of a rod which can be cut into exactly equal sections, each of either 30cm or 36cm in length is
(a) 90cm (b) 180cm (c) 360cm (d) 540cm
16. If $x = 0.0012 - 0.00074 - 0.003174$, what is the difference between x to 2 decimal places and x to 1 significant figure? (a) 0.01 (b) 0.005 (c) 0.1 (d) 0.005

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17. The angle of depression of two points A and B on a plane field from the top of a mast erected between A and B are 30° and 45° respectively. If A is westward of B, find $\angle A$ if the height of the mast is 15m from the field.

18. The radius of a circle is given as 10cm subject to an error of 0.2cm. The error in the area of the circle is

(a) 1% (b) 2% (c) 3% (d) 4%

19. If θ is acute, evaluate (a) $\tan \theta$ (b) $-\tan \theta$ (c) $\cot \theta$ (d) $-\cot \theta$

20. In a survey of 100 students in an institution, 80 students speak Yoruba, 22 speak Igbo, while 6 speak neither Igbo

nor Yoruba. How many students speak Yoruba and Igbo? (a) 96 (b) 8 (c) 64 (d) 12

21. A bag contains 5 yellow balls, 6 green balls and 9 black balls. A ball is drawn from the bag. What is the probability

that it is a black or yellow ball? The table below shows the distribution of weight measure for 100 students.

Weight (kg) 60- 62 63- 65 66-68 69- 71 71- 74 f 5 18 42 27 8

22. Calculate the mean of the distribution to two decimal places.

(a) 64.45 (b) 62.45 (c) 67.45 (d) 65.45

23. Calculate the mode of the distribution to two decimal places

(a) 67.33 (b) 65.33 (c) 65.53 (d) 67.35

T'Q is a tangent to the circle ABCDT, $\angle DTQ = 40^\circ$, $\angle AIT' = 30^\circ$, then $\angle ATD$ is

(a) 70° (b) 90° (c) 250° (d) 110° .

Sum of mt. angles of a pentagon = $540^\circ = 540^\circ - (180^\circ + 118^\circ + 80^\circ + 78^\circ) = 84^\circ$

$\angle BAC = 180^\circ - 2 \times 65^\circ = 50^\circ$ (sum of angles in a Δ)

$= 2 \times \angle ABC$ [angle at the centre]

$\therefore \angle O = 100^\circ$ (C)

3 Number of tiles needed along each length = $5m = 500 = 25$ tiles

20cm 20 Number of tiles needed across each width = $4m = 400 = 20$ tiles

20cm 20 Total number of tiles needed = $25 \times 20 = 500$ tiles (A)

Area of a sphere = $4\pi r^2$

Volume of a sphere = $\frac{4}{3}\pi r^3$

To get 7, one will subtract 2 from

9. Therefore, 1 becomes 9 when 8 is added to it. Hence x is 8 (B)

11. Total cost in L $567 + 267$ cost of 4 bags of rice = $567 \times 47 = 3237$

Cost of 3 bags of beans = $267 \times 37 = 1147$

$440_7 = 4 \times 7^2 + 4 \times 7^1 + 0 \times 7^0 = 196 + 28 = 224_7$

224_7 in base 8 = 340_8

Hence the item cost M340 (C)

12. Let the present price of an egg = x Then $N(x + 2)$ bought 5 less

Number of eggs that can be bought for N120 at Nx each

Multiply through by $x(x + 2)$

$120x = 120(x - 2) - 5(x - 2)x$

$120x = 120x - 240 - 5x^2 + 10x$

$5x^2 + 10x - 240 = 0$

$x^2 + 2x - 48 = 0$

$x^2 + 8x - 6x - 48 = 0$

$x(x + 8) - 6(x + 8) = 0$

$\Rightarrow x = 6$ or -8

Hence, $x = N6$. (A)

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13. Amount = P + Interest

$$\Rightarrow 2P = P + I$$

$$I = P$$

Δ_2 Difference between the frequency of the modal weight and the preceding class

Δ_2 Difference between the frequency of the modal class and the succeeding class

$$= 65.5 + 65.5 + 1.85 = 67.35 \text{ (D)}$$

UNIVERSITY OF JOS, 2008 POST-UME

MATHEMATICS

1. The expression $a_3 + b_3$ is equal to

7. A cyclist rode for 30 minutes at x km/h and due to a breakdown he had to push the bike for 2 hrs at $x - 5$ km/hr. If

the total distance covered is less than 60 km, what is the range of values for x ?

(a) $x < 14$ (b) $x < 20$ (c) $x < 29$ (d) $x < 28$

8. The expression $ax^2 + bx$ takes the value 6 when $x = 1$ and 10 when $x = 2$. Find its value when $x = 5$.

(a) 10 (b) 12 (c) 6 (d) -10

9. The difference of two numbers is

10, while their product is 39. Find these numbers.

(a) -3 and 10 or 13 and 10

(b) 3 and -10 or 3 and 13

(c) 3 and -3 or 3 and 13

(d) -3 and -13 or 13 and 3

10. The average age of x pupils in a class is 14 years 2 months. A pupil of 15 years 2 months joins the class and the

average age is increased by one month. Find x .

(a) 12 (b) 6 (c) 11 (d) 14

11. Dividing $2x^3 - x^2 - 5x - 1$ by $x + 3$ gives the remainder

(a) -3 (b) 47 (c) 61 (d) -47

12. Let $f(x) = 2x^3 - 3x^2 - 5x - 6$. If $x - 1$ divides $f(x)$ find the zeros of the function.

(a) 1, 2, (b) 1, 2, - (c) -1, 2, 3 (d) 1, -2, -2/3

All the 120 pupils in a school learn Yoruba or Igbo or both. Given that 75 learn Yoruba and 60 learn Igbo.

13. How many learn both languages? (a) 60 (b) 45 (c) 15 (d) 120

14. How many learn Igbo only?

(a) 45 (b) 30 (c) 15 (d) 6 (e) {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

21. In a throw of a fair die, the probability of obtaining an even number is

22. Two fair coins are tossed simultaneously. What is the probability of obtaining at least 1 tail turns up?

(a) 1/4 (b) . (c) . (d) 1

23. A bag contains 10 balls of which 3 are red and 77 are white. Two balls are drawn at random. Find the probability

of none of the balls is red if the draw is:

With replacement: (a) 0.9 (b) 1 (c) 0.4 (d) 0.49

24. Without replacement: (a) 0.1 (b) 0.47 (c) 0.42 (d) 0.21

25. A regular polygon has each of its angles as 160° . What is the number of sides of the polygon?

(a) 36 (b) 9 (c) 18 (d) 20

26. One angle of an octagon is 100° while the other sides are equal. Find each of these exterior angles.

(a) 40° (b) 80° (c) 60° (d) 140°

Let α and β be the roots of the equation $x^2 - 5x - 4 = 0$

UNIVERSITY OF JOS 2009 POST UME

MATHEMATICS

1. A sector of a circle of radius 7.2cm subtends an angle of 300° at the centre is used to form a cone.

What is the radius of the base of the cone?

(a) 6cm (b) 7cm (c) 8cm (d) 9cm (e) 5cm

2. If $p + \frac{1}{q} = t$ and $t = \frac{1}{p} - \frac{1}{q}$, express t in terms of q .

(a) $\frac{1}{q}$ (b) $\frac{1}{q-1}$ (c) $\frac{1}{q+1}$ (d) $1 + \frac{1}{q}$ (e) $\frac{1}{1-q}$

3. If $3^{2y} - 6(3^y)27$, find y

(a) 3 (b) -1 (c) 2 (d) -3 (e) 1

4. An $(n-2)$ -sided figure has n diagonals, find the number n of diagonals for a 25-sided figure.

(a) 8 (b) 7 (c) 6 (d) 9 (e) 10

5. A sum of money was invested at 8% per annum simple interest. If after 4 years the money became 330.00, what is the amount originally invested?

(a) 180 (b) N165 (c) M50 (d) 200 (e) 250

7. List all integers satisfying the inequality $2 < 2x - 6 < 4$

(a) 2,3,4,5 (b) 2,3,4 (c) 2,5 (d) 3,4,5 (e) 4,5

8. Two fair dice are rolled. What is the probability that both show up the same number of points?

(a) $\frac{1}{36}$ (b) $\frac{3}{36}$ (c) $\frac{1}{x}$ (d) $\frac{1}{3}$ (e) $\frac{1}{6}$

9. Find the probability of selecting a figure which is a parallelogram from a square, a rectangle, a rhombus, a kite and a trapezium

(a) $\frac{2}{5}$ (b) $\frac{4}{5}$ (c) $\frac{15}{15}$ (d) $\frac{5}{5}$

10. A man kept 6 black, 5 brown and 7 purple shirts in a drawer. What is the probability of his picking a purple shirt with his eyes closed?

(a) $\frac{2}{7}$ (b) $\frac{7}{18}$ (c) $\frac{11}{18}$ (d) $\frac{7}{11}$ (e) $\frac{5}{10}$

11. If P varies inversely as V and V varies directly as R^2 , find the relationship between P and R given that $R=7$ where $P=2$.

(a) $P = 98R^2$ (b) $PR^2 = 98$ (c) $P^2R = 89$ (d) $P = \frac{1}{98}R$ (e) $P = \frac{R^2}{98}$

12. If 7 and 189 are the first and fourth terms of a geometric progression respectively, find the sum of the first three terms of the progression.

(a) 182 (b) 180 (c) 91 (d) 63 (e) 28

13. Find the positive number n such that thrice its square is equal to twelve times the number

(a) 1 (b) 4 (c) 2 (d) 5 (e) 9

14. Given a regular hexagon, calculate each interior angle of the hexagon

(a) 60° (b) 30° (c) 120° (d) 45° (e) 135°

15. Factorize $6x^2 - 14x - 12$

(a) $2(x+3)(3x-2)$ (b) $6(x-2)(x+1)$ (c) $2(x-3)(3x+2)$ (d) $6(x+2x-1)$ (e) $(3x-4)(2x+3)$

16. The value of $(0.303) - (0.02)$ is

(a) 0.019 (b) 0.0019 (c) 0.00019 (d) 0.000019 (e) 0.00035

17. What is the product of $(\frac{27}{5} \div 3^3)$ and $(\frac{1}{5})$ (a) 5 (b) 3 (c) 2 (d) 1 (e) $\frac{1}{25}$

18. Find n if $\log_2 4 + \log_2 7 - \log_2 n = 1$ (a) 10 (b) 14 (c) 12 (d) 27 (e) 26

19. In 1984, Tolu was 24 years old and his father is 45 years. In what year was Tolu exactly half his father's age?

(a) 1982 (b) 1981 (c) 1983 (d) 1979 (e) 1978

20. If $x = 1$ is a root of the equation $x^3 - 2x^2 - 5x + 6$, find the other roots.

(a) -3 and 2 (b) -2 and 2 (c) 3 and -2 (d) 1 and 3 (e) -3 and 1

21. Find the probability that a number selected at random from 40 to 50 is a prime. (a) $\frac{1}{12}$ (b) $\frac{1}{17}$ (c) $\frac{1}{10}$ (d) $\frac{1}{15}$ (e) $\frac{1}{11}$

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22. If the lengths of the sides of a right-angled rectangle are $(3x + 1)$ cm, $(3x - 1)$ cm and x cm, what is x ?

(a) 2 (b) 6 (c) 18 (d) 12 (e) 0

23. A number of pencils were shared out among Peter, Paul and Audu in the ratio 2:3:5 respectively. If Peter got 5, how many were shared. (a) 15 (b) 25 (c) 30 (d) 50 (e) 55

SOLUTIONS

1. Area of the sector = curved surface area of the cone formed

For $p = 9$, $r = 9 = 32 \Rightarrow y = 2$ (C)

4. For 25 sided figure $(n - 2) \times 180 = 25 \times 180$

Taking the square root of both sides $n - 2 = 25$

$n = 27 \Rightarrow n = 7$ (B)

5. Amount (A) = Principal (P) + Interest (I) $2 < 2x - 6 < 4$

Solving the first part

$$2 < 2x - 6$$

$$2 + 6 < 2x$$

$$8 < 2x \Rightarrow 4 < x$$

Solving the last part

$$2x - 6 < 4$$

$$2x < 4 + 6$$

$$2x < 10 \Rightarrow x < 5$$

$$4 < x < 5$$

There is no such integer x !

8. There are 6 possible outcomes on a die. There are $6 \times 6 = 36$ possible outcomes on two fair dice

Required outcomes

are $\{(1,1), (2,2), (3,3), (4,4), (5,5), (6,6)\}$

Hence, the probability = $\frac{6}{36} = \frac{1}{6}$ (E)

9. There are five possible outcomes The required outcomes are square, rectangle and rhombus because they are

parallelogram. Hence, probability of selecting a figure which is a parallelogram =

$$\frac{3}{5}$$
 (A)

$$\frac{10}{7}$$
 (B)

$$6 + 5 + 7 = 18$$

$$11. P \propto \frac{1}{V}, R \propto \frac{1}{V^2}$$

Then $p = K$ and $V = CR^2$ where

K and C are constants Hence, $p = \frac{K}{CR^2}$

$P = m$ where $K = m$ is a

R^2 constant

If $P = 2$, $R = 7$

$$2 = \frac{m}{R^2}$$

$$7^2$$

$$2 = \frac{m}{49}$$

$$m = 98$$

$$P = 98, R = 2$$

So, $PR^2 = 98$ (B)

12. n th term of a G.P. = ar^{n-1}

1st term = $a = 7$ (i)

4th term $ar^3 = 189$ (ii)

Put the value of a in (ii)

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$$7r_3 = 189$$

$$r_3 = 189 / 7$$

$$r_3 = 27$$

$$\therefore r = 3$$

Sum of the first n terms of a G.P.

$$S_n = a(r^n - 1) / r - 1$$

$$S_3 = 7(3^3 - 1) / 3 - 1 = 7(27 - 1) / 3 - 1$$

$$= 7 \cdot 26 / 3 - 1 = 160$$

19. Let the number of years = x

Tolu's age = $24 + x$ while her father's age = $45 + x$

Then $24 + x = \frac{1}{2}(45 + x)$

By multiplying through by 2

$$48 + 2x = 45 + x \Rightarrow x = -3$$

Hence the year is $1984 - 3 = 1981$ (B)

20. Since $x = 1$ is a root, we have that $x - 1$ divides $x^3 - 2x^2 - 5x + 6$

The remaining roots are the roots of $x^2 - x - 6 = 0 \Rightarrow x^2 - 3x + 2x - 6 = 0$

$$x(x - 3) + 2(x - 3) = 0$$

$$(x + 2)(x - 3) = 0 \Rightarrow x + 2 = 0 \text{ or } x - 3 = 0$$

Hence, $x = -2$ and 3 are the remaining roots. (C)

21. They are eleven numbers from 40 to 50 with three primes; 41, 43 and 47.

Hence, the probability of selecting a prime = $\frac{3}{11}$

22. $(3x + 1)$ cm is the hypotenuse side since it is more than the other two sides.

Using Pythagoras' theorem

$$(3x + 1)^2 = (3x - 1)^2 + x^2$$

$$9x^2 + 6x + 1 = 9x^2 - 6x + 1 + x^2 \Rightarrow 10x^2 - 9x^2 - 6x - 6x + 1 - 1 = 0$$

$$x^2 - 12x = 0$$

$$x(x - 12) = 0 \Rightarrow x = 0 \text{ cannot be } 0, \text{ therefore}$$

$$x = 12 \text{ (D)}$$

$$7(26) = 91 \text{ (C)}$$

$$13. 3n^2 = 12n$$

$$3n^2 - 12n = 0$$

$$3n(n - 4) = 0$$

$$n = 0 \text{ or } n - 4 = 0 \Rightarrow n = 0 \text{ or } n = 4$$

Since n is positive, $n = 4$ (B)

14. Each interior angle of a regular polygon with n sides =

$$(n - 2)180^\circ$$

For a regular hexagon, each interior angle = $(6 - 2)180^\circ$

$$4 \times 180^\circ = 720^\circ \text{ (C)}$$

$$15. 6x^2 - 14x - 12$$

$$= 2(3x^2 - 7x - 6)$$

$$= 2(3x^2 - 9x + 2x - 6)$$

$$= 2[3x(x - 3) + 2(x - 3)]$$

$$= 2(3x + 2(x - 3)) \text{ (C)}$$

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$$\begin{aligned} 16. & (0.303)_3 - (0.02)_3 \\ & = (30.3 \times 10^{-2})_3 - (2 \times 10^{-2})_3 \\ & = 30.3_3 \times 10^{-6} - 2_3 \times 10^{-6} \\ & = 10^{-6} (30.3_3 - 2_3) \\ & = 10^{-6} (27810.127) \\ & = 0.027810 \end{aligned}$$

$$23. 2+3+5=10$$

Let the number of pencils shared = x

$$\text{Then } 2 \times x = 5 \Rightarrow x = 5 \times 10 = 25 \text{ (B)}$$

UNIVERSITY OF JOS 2010 Post UME

MATHEMATICS

$$3y - 2x \text{ (a) } -1 \text{ (b) } 7 \text{ (c) } 1 \text{ (d) } -7$$

2. The integral values of y which satisfy the inequality $-1 < 5 \leq 2y \leq 7$ are

(a) $-1, 0, 1, 2$ (b) $0, 1, 2, 3$ (c) $-1, 0, 1, 2, 3$ (d) $-1, 0, 2, 3$

3. If $x^2 - 5x - 6 = (x - a)^2 + b$, the value of b is (a) $-$ (b) $5/2$ (c) 2 (d) 3

4. The scores of 16 students in a mathematics test are 65, 65, 55, 60, 65, 60, 70, 75, 70, 65, 70, 60, 65, 65, 70. What is

the sum of the median and modal scores?

(a) 125 (b) 130 (c) 140 (d) 150

5. Find x if $x^2 - 2x - 15 = 0$ (a) 3, 15 (b) -3, 5 (c) 1, 15 (d) -2, 15

6. A father leaves a legacy of N45 million for his children — Peter, David and Paul — to be shared in the ratio 7:5:3.

What amount in million Naira would each receive respectively?

(a) N14, N7, N3; (b) N15, N5, N3 (c) N21, N15, N9 (d) N20, N16, N10

7. As θ tends to zero, what does $\cos \theta$ tends to? (a) $\sin \theta$ (b) 0 (c) \cdot (d) 1

8. The expression $2\cos \theta + \sin^2 \theta$ has the numerical value (a) 1 (b) 2 (c) 4 (d) 0

9. If $\tan x = \sin x$ find $\tan(90^\circ + x)$, $\cos x$ for acute value of x (a) $-\cot x$ (b) $-\tan x$ (c) $\cot x$ (d) $\tan x$

10. Evaluate the length of perpendicular from A to BC

11. The indefinite integral $\int x e^x$, for any real constant c is (a) c (b) $e^x + c$ (c) $x^2 + e^x + c$ (d) $e^x(x - 1) + c$

12. Find the area under the curve (Find the area under the curve $y(x) = \sin x$ between $x = 0$ and $x = \pi$).

(a) 2 (b) 1 (c) -2 (d) π

13. Let the letters P, Q, R and S denote parallelogram, quadrilateral, rectangle and square respectively. Using subset

notation, which of these inclusions is correct?

14. In a convex polygon with n sides, the sum of interior angles is

(a) $(n-2)\pi$ (b) $2(n-1)\pi$ (c) $4(n-1)\pi$ (d) $(2n+4)\pi$

15. Find the equation of the line perpendicular to the line $y = 2x + 1$ and passing through a point (3, 1).

(a) $y = \cdot x + 5/2$ (b) $y = 2x - 5/2$ (c) $y = x + 5$ (d) $2y = x + 5$

16. What is the distance between points (1, 2) and (4, 5) on a plane? (a) $3\sqrt{2}$ (b) $2\sqrt{3}$ (c) 3 (d) 9

17. Integrate $\int_2^{\pi} \tan(2x) dx$

(a) $2\cot(2x - \pi) + k$

(b) $\log[\cos(2x - \pi)] - k$

(c) $-\log[\cos(2x - \pi)] - k$

(d) $4 \cot(2x - \pi) \div k$

18. Find the values of x for which $5 + 2x - 3x^2 = 0$

(a) -2 and $6/5$ (b) -1 and $5/3$ (c) -2 and -1 (d) $6/5$ and $5/3$

19. A businessman invested a total of N200,000 in two companies which paid dividends of 5% and 7% respectively. If

he received a total of N 11,600 as dividend, how much did he invested at 7%?

(a) N 160,000 (b) 140, 000 (c) N120,000 (d) N80, 000

20. If $\sqrt{a^2 + b^2}$ is the square root of $95 - 30\sqrt{10}$, the values of a and b are, respectively

(a) 5, 2 (b) 2, -5 (c) -5, 3 (d) 3, -5

(a) $3c^2$ (b) $17c^2$ (c) $2c - c^2$ (d) c^2

22 Express $5y - 12$ in partial $(y-2)(y-3)$

(a) $2 - 3$ (b) $2 + 3$ (c) $2 - 3$ (d) $5 + 4$

23. The second term of an infinite geometric series is $\frac{1}{2}$ and the third term is $\frac{1}{4}$. Find the sum of the series.

(a) 2 (b) 1 (c) $\frac{3}{2}$ (d) $\frac{2}{3}$

24. In the figure AB and AD are tangents to the circle. If $\angle BCS = 55^\circ$ and $\angle BDC = 48^\circ$, find $\angle BAD$.

(a) 55° (b) 70° (c) 77° (d) 48°

25. Find the area of the triangle: (a) 24cm (b) 24cm^2 (c) 12cm^2 (d) 12cm

SOLUTION

$$\Rightarrow x - y = -3 \dots (i)$$

$$y - 2x = 5 \dots (iii)$$

adding (i) to (ii)

$$-x = 2 \Rightarrow x = -2$$

Putting the value of x in (i)

$$-2 - y = -3 \Rightarrow y = -2 + 3 = 1$$

$$3y - 2x = 3(1) - 2(-2) = 3 + 4 = 7 \text{ (B)}$$

$$2. -1 < 5 - 2y \leq 7 \Rightarrow -1 - 5 < -2y \leq 7 - 5$$

$$-6 < -2y \leq 2$$

Dividing through by -2 $\Rightarrow 3 > y \geq -1$

The integral values of y are -1, 0, 1, 2 (A)

$$3. x^2 - 5x + 6$$

4. Re-arrange the scores in ascending

55, 60, 60, 65, 65, 65, 65, 65, 70, 70, 70, 70, 75

Median = 65 Mode = 65

The sum of the median and modal scores = $65 + 65 =$

130 (B)

$$5. x^2 - 2x - 15 = 0 \Rightarrow x^2 - 5x + 3x - 15 = 0$$

$$x(x-5) + 3(x-5) = 0 \Rightarrow (x-5)(x+3) = 0 \Rightarrow x = 5 \text{ or } -3 \text{ (B)}$$

$$6. 7 + 5 + 3 = 15$$

Peter would receive $\frac{7}{15}$ MS = N21 is

David would receive $\frac{5}{15} \times N45 = 15$

Paul would receive $\frac{3}{15} \times N45 = 9$ (C) 7. $\cos \theta$ tends to

1 as θ tends to zero (D)

$$8. \cos^2 \theta + \sin^2 \theta = 1 \text{ (A)}$$

15. Slope of the line $y = 2x + 1$ is 2.

Therefore, the slope of the straight line perpendicular

to it is $-\frac{1}{2}$. Using the equation $y - y_2 = m(x - x_2)$ slope, the

required equation is $y - 1 = -\frac{1}{2}(x - 3)$

$$x - 3 = 2(y - 1)$$

$$x - 3 = 2y - 2 \Rightarrow x = 2y + 1$$

$$2 \text{ (A)}$$

16. Distance between points (1,2) and (4,5)

17. $\int 2\tan(2x+\pi)dx$

Let $du = 2dx$ $\int 2\tan(2x+\pi)dx = \int 2\tan u dx$

$= -\ln \cos u + c = -\ln \cos (2x + \pi) + c$ (C)

$5 + 2x - 3x^2 = 0$

18. $5+2x-3x^2 = 0 \Rightarrow 5+5x-3x-3x^2=0$

$5(1+x)-3x(1+x) = 0$

$(5-3x)(1+x) = 0 \Rightarrow 5-3x = 0$ or $1+x = 0$

$x = 5/3$ or -1 (B)

19. Let the amounts invested at dividends of 5% and 7% be x and y respectively Then, $x + y = 200,000$ (i)

$0.05x + 0.07y = 11,600$ (ii)

Multiply (i) by 0.05

$0.05x + 0.05y = 10,000$ (iii)

Subtract (iii) from (ii)

$0.02y = 1,600 \Rightarrow y = 1,600 / 0.02 = 80,000$

The amount invested at 7% is N80,000 (D)

20. Since $95 - 30\sqrt{10}$ has $a\sqrt{5} + b\sqrt{2}$ as its square root,

$(a\sqrt{5} + b\sqrt{2})^2 = 95 - 30\sqrt{10}$

$5a^2 + 2b^2 + 2ab\sqrt{10} = 95 - 30\sqrt{10}$

By comparing both sides

$5a^2 + 2b^2 = 95$ (i)

$2ab = -30$

$ab = -15$ (ii)

21. By checking (substituting) each of the options, the answer is (D)

22. Let $5y - 12 = A + B$

$(y-2)(y-3) = y^2 - 2y - 3$

$5y - 12 = A(y-3) + B(y-2)$... (i)

Put $y = 2$ in (i)

$10 - 12 = -A \Rightarrow A = 2$

Put $y = 3$ in (i)

$15 - 12 = B(1)$

$B = 3$

Hence, $5y - 12 = 2 + 3$ (B)

$(y-2)(y-3) = y^2 - 2y - 3$

23. n^{th} term of a G.P. = ar^{n-1} where 'a' is the first term and 'r' is the common ratio

2nd term = $ar = -1$ (i)

3rd term = $ar^2 = 1$ (ii)

Dividing (ii) by (i) $r = -1$.

Substituting the value of r in (i)

$a = 1$

Sum to infinity of a Geometric series

$S_{\infty} = \frac{a}{1-r} = 1$

$1 - (-1) = 2/3$ (D)

$3/2$

$D = 55^\circ$ (D)

24 $\angle ABD = 55^\circ$ angle in alternate segment

$\angle ADB = 55^\circ$

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SAD = 180° — (A + B) (sum of angles in a triangle)
BAD = 180° — (A + B) (sum of angles in a triangle)
= 180° — (55° + 55°) = 180° — 110°
= 70° (B)

UNIVERSITY OF JOS 2010 POST UTME TEST

PHYSICS

1. Which of the following phenomena cannot be explained by the molecular theory of matter?
(a) evaporation (b) expansion (c) conduction (d) radiation
2. The most likely measurement of length of an object using a vernier caliper is
(a) 3.0cm (b) 3.3cm (c) 3.33cm (d) 3.333cm
3. An 0.040kg string 0.80m long is stretched and vibrated in a fundamental mode with a frequency of 40Hz. What is the speed (of propagation) of the wave and the tension in the string?
(a) 64m/s (b) 340m/s (c) 32m/s (d) 28m/s
4. What is the total power output of a source with intensity 0.050W/m² at a distance of 3.0m from the source?
(a) 112W (b) 5.6W (c) 15W (d) 30W
5. The superposition of two or more waves to produce a maximum or point is known as
(a) reflection (b) refraction (c) diffraction (d) interference
6. The acceleration due to gravity
(a) increases with altitude
(b) decrease with increasing altitude
(c) Increases with increase in increase in the square of the altitude
(d) Is not affected by the altitude
7. Which of the following statements are correct of nuclear fission? During the process
(a) energy is released
(b) more neutrons are released than those that cause fission
(c) small nuclei merge into large nuclei (d) there is a loss of mass.
8. Which of the following statements is not true?
(a) electric field intensity is force per unit charge
(b) electric potential is a vector (c) the S.I. unit of electric field strength is N/C
(d) electric field intensity is equal to potential gradient
9. Which of the following about electrolysis is false?
(a) liquid that conduct electricity and are split up chemically by the current are electrolyzed
(b) the current is brought into the electrolyte by the anode
(c) the current is taken away from the electrolyte by the cathode (d) the container which holds the electrolyte and the electrode is the voltmeter
10. Which of the following is not true about the properties of x-rays?
(a) they are not deflected by magnetic or electric field
(b) they ionized a gas, making it a conductor (c) they are massive
(d) they have high penetrating power
11. A transformer is connected to a 240V supply. The primary coil has 40 turns, and the secondary is found to be 960V. What is the ratio of the number of turns of the primary coil to the number of turns of the secondary coil?
(a) 1:4 (b) 4:1 (c) 1:6 (d) 6:1

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12. If 21g of alcohol of density 0.7gcm³ is mixed with log of water, what would be the density of the resulting mixture?
(a) 780gcm³ (b) 0.78gcm³ (c) 30gcm³ (d) logcm³
13. For a particle having an x coordinate that varies in time according to the expression $x = 4t - 2t^2$. The instantaneous velocity for the particle at $t = 2.5$ is: (a) 12m/s (b) 6m/s (c) 0m/s (d) 10m/s
14. A long-jumper leaves the ground at an angle of 20° above the horizontal and at a speed of 11m/s. How far does it jump in the horizontal direction? (a) 0.384m (b) 7.94m (c) 8.45m (d) 0m
15. A mass of 0.5kg is attached to one end of a helical spring and produces an extension of 2.5cm. The mass now set into vertical oscillation of amplitude 10mm. The period of oscillation is: ($g = 10\text{m/s}^2$)
(a) 0.33s (b) 100s (c) 200s (d) 280s
16. A boat is passing under a bridge. The deck of the boat is 15m below the bridge. A small package is to be dropped from the bridge onto the deck of the boat when the boat is 25m from just below the drop point. What (boat) speed is necessary to have the package land in the boat? ($g = 9.8\text{m/s}^2$)
(a) 17m/s (b) 14m/s (c) 1.7m/s (d) 4.9m/s
17. An 0.60kg rubber stopper is whirled in a horizontal circle of 0.80m radius at a rate of 3.0 revolutions per second. What is the tension in the string? (a) 14N (b) 80N (c) 170N (d) 24N
18. An automobile is traveling at 60km/hr. Calculate the angular velocity of the 0.35m radius wheels.
(a) 16.67 rad/s (b) 47.6 rad/s (c) 21 rad/s (d) 171.4 rad/s
19. An air bubble at the bottom of a lake has a volume of 20cm³, pressure of 4.9Pa, and temperature 4°C. The bubble rises to the surface where the temperature is 20°C and the pressure 1.0Pa. Find the volume as the bubble reaches the surface (Take 1 atm = 1.0 x 10⁵N/m²) (a) 124cm³ (b) 319cm² (c) 60cm³ (d) 104cm³
20. A gas at constant pressure of 4.0 x 10⁵Pa is cooled so that its volume decreases from 1.6m³ to 1.2m³. What work is performed by the gas? (a) 6.4 x 10⁵J (b) 3.2 x 10⁵J (c) 1.6 x 10⁵J (d) 0.4 x 10⁵J
21. Highly polished silvery surfaces are:
(a) poor absorbers but good emitter of radiation.
(b) Good absorbers and good emitters of radiation
(c) Poor emitters but good reflectors of radiation
(d) Poor emitters and poor reflectors of radiation
22. Which of the following is not true about an object that is projected upwards at angle θ
(a) the velocity is maximum at the maximum height
(b) the acceleration along the horizontal direction is zero
(c) the maximum range (R_{max}) for an object moving with speed u is given by u^2/g
(d) the time it takes to get the maximum height is equal to the time it takes to come back to the point of projection.
23. When three coplanar non-parallel are in equilibrium. Which of the following statements is false?
(a) they can be represented in magnitude and direction by the three sides of a triangle taken in order
(b) the lines of action meet at a point

(c) the magnitude of any one force equals the magnitude of the resultant of the other two forces

(d) any one force is the equivalent of the other two.

24. Which of the following statements is not TRUE about a body performing simple harmonic motion?

(a) the linear speed is the product of the angular speed and the radius or amplitude

(b) the linear acceleration is the product of the square of the angular speed and the displacement

(c) frequency is the number of complete revolution per second made by a vibrating body

(d) the S.I. unit of amplitude is Hertz (Hz).

25. If the force of gravity of an object of mass m , the gravitational field strength, g , is given by the following equation:

(a) $g = \sqrt{mF}$ (b) $g = mF$ (c) $g = m\sqrt{F}$ (d) $g = F/m$

EXPLANATION TO ANSWERS

1 (D) — Conduction is heat transfer by molecular vibration at a fixed position and convection by molecular motion.

Expansion involves an increase in the separation between molecules. A material medium is not needed for heat

transfer by radiation.

2. (C) — Vernier caliper can be used in measuring the diameter of a rod or the inside diameter of a tube. Its reading is

always in two decimal places where the second decimal place is given by the number on the vernier scale which

coincides with a major scale mark.

3. In fundamental note, f_0 , $L = \lambda/2$

7 The equation is incomplete

8 B – Electric potential is a scalar quantity

9 D

10 C

Ration n_p : $n_3 = 40: 160 = 1: 4$ (A)

Density = Mass / volume

Volume of alcohol = 210 = 30cm³

0.7gcm⁻³

Volume of water = 210 = 10cm³

1.7gcm⁻³

Total volume of mixture 30+10=40cm³

Mass of mixture = 21g + 10g = 31g

Density = $31/40 = 0.775\text{gcm}^{-3}$ (B)

13 $x = 4t - 2t^2$

$2x = 4t - 2t^2$

$2t = 4 - 4t = 4 - 4(2.5) = -6\text{m/s}$

Velocity = 6m/s (B)

14. Range, $R = U_2 \sin 2\theta = (11)^2 \sin(2)$ (20)

$g = 9.8 = 7.94\text{m}$ (B)

15. For helical spring,

ANSWER KEY

1. D 2. C 3. A 4. - 5. D

6. D 7. - 8. B 9. D 10. C

11. A 12. B 13. B 14. B 15. A

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16.B 17.C 18.B 19. D 20. C
21.D 22.A 23D 24. D 25. D

UNIVERSITY OF JOS 2006 POST UME TEST

CHEMISTRY

- All the following will liberate a gas when reacted with dilute hydrochloric acid except
 - Sodium tetraoxosulphate(VI) salt
 - Sodium trioxocarbonate(IV) salt
 - Sodium sulphide
 - Sodium trioxonitrate(V)
- The isomer of a compound C_5H_{10} which does NOT decolorize bromine water is
 - 2-methylbutane
 - 2,2-dimethylpropane
 - 2-methylbut-1-ene
 - Methylcyclobutane
- A mixture of nitrogen, oxygen and helium contains 0.25, 0.15 and 0.4 mole of these gases respectively. If the pressure contribution due to oxygen was 2.5 atm. The partial pressure of helium is
 - 4.0 atm
 - 0.8 atm
 - 3.33 atm
 - 6.67 atm
- Elements P has atomic number of 12 while element Q has an atomic number 15. Combination of P and Q gave a compound P_mQ_n . the respective values of m and n are
 - 2 and 2
 - 3 and 2
 - 2 and 3
 - 3 and 2
- $CH_x + 9O_2 \rightarrow 6CO_2 + 6H_2O$ The hydrocarbon, CH in the reaction above is most likely
 - Alkane
 - benzene
 - alkene
 - alkyne
- A 5 dm^3 sample of a gas weighed 1.236g of $20^\circ C$ and a pressure of one atmosphere. The reactive molecular mass of the gas is [$R = 8.314 kJ K^{-1} mol^{-1}$, $1 atm = 101,325 J m^{-3}$]
 - 58.07
 - 588.367
 - 5.88
 - 197.9
- The amount of methane molecules, CH_4 in 8.0 grams of methane is
 - 8 mol
 - 128 mol
 - 2 and 3
 - 2 and 1
 - 0.5 mol
 - 3.01×10^{23} mol
- The concentration of a solution obtained by dissolving 0.53g of pure anhydrous Na_2CO_3 in water to make $250 cm^3$ of solution.
 - $2.0 \times 10^{-5} mol dm^{-3}$
 - $2.1 g dm^{-3}$
 - $2.0 \times 10^{-2} mol dm^{-3}$
 - $5.0 \times 10^{-3} mol dm^{-3}$
- What is the maximum volume of CO_2 at s.t.p. that can be obtained when dilute hydrochloric acid is added to 10 grams of $CaCO_3$? [$Ca=40, C=12, O = 16$]
 - $2.24 dm^3$
 - $22.4 dm^3$
 - $0.224 dm^3$
 - $22.4 dm^3$
- Sulphur (IV) oxide travels a given distance in 10sec. How long will it take equal volume of helium to travel the same distance under the same conditions? [$S=32, O=16, He=4$]
 - 1.6sec
 - 40sec
 - 5.0sec
 - 2.5sec
- The volume of hydrogen gas produced at s.t.p. when 100cm of 2M hydrochloric acid reacts with excess zinc is
 - $2.24 dm^3$
 - $4.48 dm^3$
 - $1.12 dm^3$
 - $4.8 dm^3$
- During electrolysis, two cells each containing molten Al_2O_3 and fuse $CaCl_2$ were connected in series. A current of 15Amp was passed through the cells for a given period of time. At the end of the electrolysis 9g of calcium was found to have been deposited at the cathode what mass of aluminium would be deposited in the second cell [$Al=27, Ca=40$]

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- a) 8.82g b) 4.44g c) 17.60g d) 4.05g
13. The balanced equation for the reaction of tin(II) salt with potassium dichromate(VI) in an acidic medium can be represented as $e\text{Sn}^{2+} + f\text{Cr}_2\text{O}_7^{2-} + g\text{H}^+ \rightarrow h\text{Sn}^{4+} + i\text{Cr}^{3+} + j\text{H}_2\text{O}$ e, f, g, h, i and j are respectively
- a) 3, 5, 6, 3, 1 and 4
b) 3, 1, 14, 3, 2 and 7
c) 3, 2, 6, 1, 5 and 6
d) 5, 2, 1, 5, 3 and 2
14. The pH of a solution containing $0.5 \times 10^{-6} \text{ M H}_2\text{SO}_4$ is a) 6.3 b) 6.5 c) 6.0 d) 5.0
15. Which of the following oxides will NOT dissolve in both dilute hydrochloric acid and 2M sodium hydroxide solution? a) Lead (II) oxide b) Aluminium oxide c) Zinc(II) oxide d) Calcium oxide
16. The I.U.P.A.C. name for the compound is
- a) Pent-3-enoic acid
b) Pent-4-enoic acid
c) Pent-2-enoic acid
d) Pent-3-ene-1-oic acid
17. Metal salts of long chain fatty acids are known as
- a) Detergents b) double salts c) soaps d) grease
- a) CH_3COOH and $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$
b) CH_3COOH and $\text{CH}_3\text{CH}_2\text{CH}_3$
c) CH_3COOH and $\text{CH}_3\text{CH}_2\text{OH}$
d) CH_3COOH and $\text{CH}_3\text{CH}_2\text{CH}_2\text{Cl}$ of oxidation of
- a) butan-3-ol
b) butan-1-ol
c) 3-methylpropan-2-ol
d) Butan-2-ol
20. Which of the following structural formulas is NOT isomeric with the others?
- a) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{-OH}$
b) $\text{CH}_3\text{-O-CH}_2\text{CH}_2\text{CH}_3$

The curve above represents the solubility curve of KClO_3 . The number of moles of KClO_3 crystals produced by cooling 200cm^3 of a saturated solution of the salt from 65°C to 25°C is 17

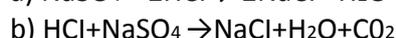
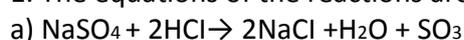
- a) 6.30mole b) 3.26mole c) 0.63mole d) 7.30mole
22. During a compression process involving an ideal gas at pressure P_1 , when the volume, V of the gas was halved, the temperature in Kelvin increases by half its initial value. The final pressure P_2 is given by
- a) $3P_1$ b) $12P_1$ c) $6P_1$ d) $1.5P_1$
23. Cellulose and starch can be classified as one of the following:
- a) Hydrocarbons b) sugars c) carbohydrates d) alkaloids

Answer Key

1. D 6. A 11. A 16. C 21. B
2. D 7. D 12. D 17. C 22. A
3. D 8. C 13. B 18. A 23. C
4. C 9. A 14. C 19. D 5. C 10. D 15. D 20. C

Explanation to the Answers

1. The equations of the reactions are represented below:



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2. Bromine water is used to test for unsaturation in organic compounds. C_5H_{10} tested negative to bromine water

indicates that the compound has one double bond equivalent and must be a cyclic compound (D)

3. Total No. of mole = $0.25 + 0.15 + 0.4 = 0.8$ mole

Partial pressure of oxygen = $180 = 6.66$ atm (D)

4. $P = 12 = 1\text{S}_22\text{S}_22\text{P}_63\text{S}_2$ $Q = 15 = 1\text{S}_22\text{S}_22\text{P}_63\text{S}_23\text{P}_3$

Element P have 2-electrons in its outermost shell. Element Q have 5-electrons in its outermost shell. Element Q

needs 3-electrons to go to octet configuration. It will need 6- electrons from 3-atoms of P to complete its

configuration while 2 atoms of Q is needed

P_3Q_2 (C)

$X = 6$ & $y/2 = 6$

$Y = 12$

C_6H_{12} (Alkenes) \rightarrow n-hexene (C)

6. Vol = $0.512\text{dm}^3 = 0.512\text{m}^3$

$T = 20 + 273 = 293\text{K}$

Pressure = $1\text{atm} = 101,235\text{tm}^{-3}$

= 0.02 l9mole

Relative molecular mass = Molar mass =

$1236\text{g} = 58.07$ (A)

0.0129mol

7. No. of mole = $80\text{g} = 0.5$ mole

16mol^{-1}

1mole of methane molecules contains

6.02×10^{23} molecules of methane

0.5 moles of methane molecules will contain

181

= $0.5 \times 6.02 \times 10^{23}$ molecule

= 3.02×10^{23} molecule (D)

8. Molar mass of Na_2CO_3

= $(23 \times 2) + 12 + (12 \times 3) = 106\text{g/mol}$

No. of mole = $0.53 = 5 \times 10^{-3}$ mole

106

Conc. In $\text{mol/dm}^3 =$ No of mole

Vol in dm^3

= 5×10^{-3}

$250/1000\text{dm}^3$

9. $2\text{HCl}_{(\text{aq})} + \text{CaCO}_3 \rightarrow \text{CaCl}_2 + \text{H}_2\text{O} + \text{CO}_2$

2 mole 1 mole 1 mole 1 mole

No. of mole of $\text{CaCO}_3 = 10 = 0.1$ mole

1 mole of CO_2 is produced in 22.4dm^3 at stp 0.1mole of

CO_3 will be produced in

$0.1\text{mole} \times 22.4\text{dm}^3$

$1\text{rmole} = 2.24\text{dm}^3$ of CO_2 (A)

10. Vapour density . $\times 64 = 32 = \text{psO}_2^{\text{f}} \text{SO}_2$

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Vapour density of helium = $\frac{M}{2} = 2 = PHe$

$10 = x$

$x = 2.5 \text{secs (D)}$



2 mole | 1 mole | 1 mole

No. Of mole of HCl = $2 \text{mole} \cdot \text{dm}^{-3} \times 100 \text{dm}^3$

$1000 = 0.2 \text{mole}$

2 mole of HCl produces 1 mole of hydrogen gas

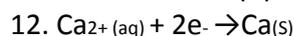
0.2mole of HCl produces 0.1/mole of H_2

1 mole of H_2 produces 22.4dm^3 of stp

0.1 mole of H_2 will require

$22.4 \text{dm}^3 \times 0.1 \text{mole}$

1 mole = $2.24 \text{dm}^3 \text{(A)}$

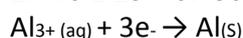


No. of mole of $\text{Ca}^{2+} = \frac{9}{40} = 0.225 \text{mole}$

1 mole of Ca $\text{Ca}^{2+}_{(aq)}$ deposited by 2F

0.225mole of Ca^{2+} will be deposited by

$2F \times 0.225 = 0.450F$



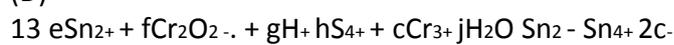
3F of Al deposited by 1mole

If of Al will be deposited by $\frac{1}{3} \times 0.45F$ mole

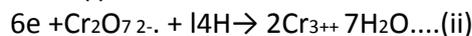
$\frac{1}{3} \times 0.45 = 0.15 \text{mole}$

Mass of aluminium deposited = $0.15 \text{mole} \times 27 = 4.05 \text{g}$

(D)

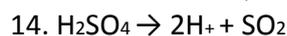


.....(i)



Multiply equation (i) by 3 and add to equation

.....(ii)



1mole 2 mole $0.5 \times 10^{-5} \text{mole} / \text{dm}^3$ $2 (0.5 \times 10^{-6} \text{mol} / \text{dm}^3)$

$[\text{H}^+] = 1.0 \times 10^{-6} \text{mol} / \text{dm}^3$

$\text{pH} = -\log [1.0 \times 10^{-6} \text{mol} / \text{dm}^3]$

$\text{pH} = -\log [1 \times 10^{-6}] = 6 \log 10 - 0 = 6$ (C)

15. Lead(II) oxide, aluminium oxide and zinc oxide are amphoteric oxide, they behave both as basic oxides and as

acidic oxides while CaO is basic oxide, it only react with dilute acid, hydrochloric and not with sodium hydroxide(D)

17 Saponification is the neutralization of fatty acids with NaOH to form long chain metal salts of fatty acid (C) from

the oxidation of secondary alcohol. There is nothing like butan-3-ol, butan-1-ol is primary alcohol, 3-methylpropan-2-

ol is a wrong IUPAC nomenclature, butan-2-ol is the only secondary alcohol present(D).

20. Option A, B and D have $\text{C}_4\text{H}_{10}\text{O}$ — molecular formula while C — have $\text{C}_4\text{H}_8\text{O}$ (C).

21. Solvent + solute = solution

At 65°C Solubility = $7 \text{mol} / \text{dm}^3$ of 200cm^3 of KClO_3

No. of mole $7 \text{mol} / \text{dm}^3 \times 200 \text{dm}^3$

$1000 = 1.4 \text{ mole of } \text{KClO}_3$

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Mass of KClO_3 crystals = $1.04 \text{ mol} \times 122.5 \text{ g/mol} = 171.5 \text{ grams}$

At 25°C 1 mol/dm^3 of 200 cm^3 of KClO_3

No. of mole = $1 \text{ mol/dm}^3 \times 200 \text{ dm}^3$

$1000 = 0.2 \text{ mole}$

Mass of KClO_3 crystal = $0.2 \text{ mol} \times 122.5 \text{ g/mol} = 24.5 \text{ grams}$

Mass of crystals = $171.5 - 24.5 = 147.0 \text{ g}$

No of mole = $147 \text{ g} = 12 \text{ mole (B)} \quad 122.5 \text{ g/mol}$

22. $P_1 = P_1 V_2 = .V_1$

$P_1 = V_1 T_2 = .T_1$

$T_1 = T_1$

$P_2 = P_1 V_1 T_2 = P_1 \times V_2 \times 3/2 V_2$

$T_1 V_2 V_2 \times . V_1$

UNIVERSITY OF JOS 2007 POST UME TEST

CHEMISTRY

1. Consider the reaction $2\text{A}_{(g)} + \text{B}_{(g)} + \text{C}_{(g)} \rightleftharpoons \text{D}_{(g)} + 2\text{E}_{(g)}$ $\Delta H = +25.6 \text{ kJ}$

Which of the following changes will favour the formation of the products of the reaction represented above, at equilibrium?

- a) Decrease in temperature
- b) Increase in pressure
- c) Increase in temperature
- d) Decrease in volume

2. An element 2X undergoes radioactive decay by emitting two alpha particles and a beta radiation. Which of the following nuclei correctly describe the product formed by the reaction?

3. Which of the following alkanols will not undergo oxidation reaction by acidified $\text{K}_2\text{Cr}_2\text{O}_7$?

- a) $\text{CH}_3\text{CH}_2\text{CH}(\text{OH})\text{CH}_3$
- b) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$
- c) $\text{CH}_3\text{CH}_2\text{CH}_2\text{C}(\text{CH}_3)(\text{OH})\text{CH}_3$
- d) None of the above

4. The electronic configuration of the specie underlined as in the molecule H_2S is

- a) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^4$
- b) $1s^2 2s^2 2p^6 3s^2 3p^4$
- c) $1s^2 2s^2 2p^6 3s^2 3p^2$
- d) $1s^2 2s^2 2p^6 3s^2 3p^6$

5. The functional group(s) of an amino acid is/are

- a) NH_2 , $-\text{COOH}$
- b) $\text{C}_n\text{H}_{2n+1}$, COOH
- c) $-\text{COCl}$, $-\text{COOH}$
- d) COOH , CONH_2

6. A student while trying to identify two gases labeled A and B, found that gas A is acidic to litmus paper and turn acidified potassium dichromate solution green, while gas B turns red litmus paper blue and forms dense white fume with hydrogen chloride. The correct identity of A and B respectively are

- a) CO_2 and N_2
- b) SO and NH_3
- c) HCl and NH_3
- d) NO_2 and PCl_5

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7. Which of the following titrations will have a solution with a pH greater than 7 at the end point (equivalence point) of the titration?

- a) Titration of sodium hydroxide with tetraoxosulphate(VI) acid
- b) Titration of sodium trioxocarbonate(IV) with hydrochloric acid
- c) Titration of sodium hydroxide with oxalic acid (ethanedioic acid)
- d) Titration of ammonium hydroxide and trioxonitrate(V) acid.

8. 70cm³ of hydrogen are sparked with 25cm³ of oxygen at stp. The total volume of the residual gas is

- a) 20 cm³ b) 35 cm³ c) 45cm³ d) 25 cm³

9. A solution X, on mixing with AgNO₃ solution, gives a white precipitate soluble in NH₃. A solution Y when added to X, also gives a white precipitate which is soluble on boiling. Solution Y contains

- a) Ag b) Pb²⁺ c) Pb⁴⁺ d) Zn²⁺

10. Which of the following statement is an exception in the assumptions of the kinetic theory of gases?

- a) The particles are of negligible size
- b) The particles are in constant random motion
- c) The particles are of negligible mass
- d) The particles collide with each other

11. A saturated solution of AgCl was found to have a concentration of 1.30 x 10⁻⁵ mol dm⁻³.

The solubility product of AgCl therefore is

- a) 1.30 x 10⁻¹⁰ mol² dm⁻⁶
- b) 2.60 x 10⁻¹² mol² dm⁻⁶
- c) 1.30 x 10⁻¹⁰ mol² dm⁻⁶
- d) 1.69 x 10⁻¹⁰ mol² dm⁻⁶

12. 0.06g of a hydrocarbon occupies 32cm³ at s.t.p.. Its formula is

- a) C₃H₆ b) C₂H₂ c) C₃H₄ d) C₂H₆

13 Consider the following compounds

- (i) CH₃CH₂C(CH₃)CH₂CH₃
- (ii) CH₃CH₂CH₂CH₃
- (iii) CH₃CH(CH₃)C(CH₃)₂CH₃
- (iv) **CH₃CH(CH₃)CH₃**

The correct arrangement of the compounds in their increasing order of volatility is

- a) iv. ii. i. iv
- b) iii, i, ii, iv
- c) ii, i, iii, iv
- d) iii. i. iv. ii
- h) iii. i. ii. iv

14. Which of the following processes leads to increase in entropy?

- a) 2HNO₂ + 2H₂ → 2H₂O + 2NO + 12
- b) Zn + H₂SO₄ → ZnSO₄ + H₂
- c) BaCl₂ + 2AgNO₃ → AgCl₂ + Ba(NO₃)₂
- d) 4FeO + O₂ → 2Fe₂O₃

15. Which of the following processes leads to increase in entropy?

- a) Mixing of a sample of NaCl and sand
- b) Condensation of water vapour
- c) Boiling of a sample of water
- d) Cooling a saturated solution

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16. Which one of the following statements is true?
a) Most solids have low densities
5) Most gases are ionic compounds
c) Solids, like liquids and gases, do not have fixed shapes and fixed volumes
d) Gases do not have their own shape but rather expand to fill the shapes of their containers uniformly.
17. A liquid begins to boil when
a) Its volume is slightly decreases
h) Its vapour pressure is lower than the external pressure
c) Its vapour pressure equals the external pressure
d) Its molecules start escaping from the surface
18. An element which exists in more than one crystalline form is said to exhibit
a) Polymorphism b) isotopy c) allotropy d) isomerism
19. Which of the following is an example of a chemical change?
a) Freezing of water
b) dissolution of NaCl in water
c) rusting of iron
d) separating a liquid mixture by distillation.
20. The electronic configuration in the ground state of the chloride ion (Cl⁻) is
a) $1s^2 2s^2 2p^6 3s^2 3p^5$
b) $1s^2 2s^2 2p^6 3s^2 3p^6$
c) $1s^2 2s^2 2p^6 3s^2 3p^7$
d) $1s^2 2s^2 2p^6 3d^8$
21. The oxidation number of oxygen in BaO₂ is a) -2 b) -4 c) -1 d) 0
22. Which ONE of the following statements is true for the p-block elements?
a) Electronegativity increases as we go down a group
b) Electronegativity increases regularly from left to right across a period
c) Electronegativity decreases regularly from left to right across a period
d) Electronegativity remains almost constant across a period.
23. The general formula for carboxylic acids is
a) Alkanone b) Alkanal c) Alkanol d) alkanoate

ANSWER KEY

1. C 6B. 11.D 16.D 21 C
2. C 7.C 12.A 17.C 22B
3. C 8.A 13.D 18.C 23.C
4. D 9.B 14.C 19.C 24B
5A. 10. C 15.C 20.B

EXPLANATION TO ANSWER

1. The reaction is endothermic in the forward direction hence an increase in temperature will favour the forward reaction. The change in pressure will have no effect since the no of mole of gaseous component on both side of the equation is equal (C)
3. Tertiary alcohol will not undergo oxidation reaction by acidified K₂Cr₂O₇, option A is secondary alcohols B - is primary alcohol while option C is a tertiary alcohol (C).
4. H₂S Sulphur in the compound has gained two electrons we have S²⁻ 18 electrons S²⁻ - 1S² 2S² 2P₆ S²⁻ 3P₆ (D).
- 5 A

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6 A Acidic to litmus paper and turn acidified $K_2Cr_2O_7$ green B — turns red litmus paper blue and form dense white

fume with HCL. Compound A is acidic in nature and a reducing agent. the only correct compound in the option is SO_2

while B — is base and production of dense white fume with HCL confirms the presence of NH_3 gas (B).

7 $NaOH + H_2SO_4 \rightarrow$ strong base vs strong acid (pH₄ to pH₁₀)

$Na_2CO_3 + HCL \rightarrow$ weak base vs strong acid (pH₄ to 7)

$NaOH + (COOH)_2 \rightarrow$ strong base Vs weak acid (pH₇ to 11)

$NH_4OH + HNO_3 \rightarrow$ Weak base vs strong acid (pH₄ to 7)

8 $2H_{2(g)} + O_2 \rightarrow 2H_2O_{(l)}$

Combining Volumes 2 mole 1mole 2mole

Volume before sparking $70cm^3$ $25cm^3$

Reacting volume $50cm^3$ $25cm^3$ $50cm^3$

Volume after spark $20cm^3$ ---- $50cm^3$

Residual gases = unreacted hydrogen = $20cm^3$ + (A).

9. X + $AgNO_3$ — White precipitate soluble in NH_3 confirmed the presence of Cl^-

Y + X — White precipitate which is soluble on boiling, A metallic salt of chloride is formed. All common chloride salts

are water soluble except $AgCl$ and $PbCl_2$ which are only soluble in hot water (B). 10. C

$22400cm^3$ of Hydrocarbons contains 1mole $32cm^3$ of Hydrocarbon will contain $32cm^3 \times 1$ mole

$22400cm^3 = 1.428 \times 10^{-3}$

mole. $0.06g$ Molar mass = $1428 \times 10^{-3} = 42g mol^{-1}$ (A)

The molar mass corresponds with that at C_3H_6 (A).

13. Volatility decrease as the intermolecular forces in compound becomes stronger. iii and i are isomers with

molecular formula, C_7H_{16} while ii and iv are isomers corresponding to molecular formula C_4H_{10} .

Generally, volatility

decreases as molecular weight increases (branching not with standing). Hence iii and i are less volatile than iv and ii.

Therefore, it is more volatile iv because of presence of branching in iv while i is more volatile than iii because of

increase of branching in iii (D).

14 Option C is a precipitation reaction, in which the oxidation state of the reactions is the same with that of the

product (C).

15. Boiling of a sample of water increase its entropy because there will be change in the physical state of water from

solid to liquid and to gaseous form (C). 16. D

17. When a liquid is heated, the rate of evaporation increases. The saturated vapour pressure of liquid also increases

until a temperature is reached at which it equals the prevailing atmosphere pressure. When this happens, bubbles of

vapour form in the liquid and rise to the surface, this liquid is then said to BOIL. (C)

18. C

19. A chemical change is one in which new kind of matter is formed. All other reactions are physical change because

the reaction can go back to the starting product while the process of rusting of Iron can not be easily reversed. (C).

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20. Cl⁻ - 18 electrons gain one electron 1S²2S² 2P⁶3S² 3P⁶ (B).

21. BaO₂ → + 2 + 2x = 0

2x - 2 X = -1(C).

22. Electronegativity increases across the period this is the reason for the high electronegativity of both chlorine of fluorine. (B).

24. C

UNIVERSITY OF JOS 2008 POST UME TEST

CHEMISTRY

1. Inter-atomic combinations involve the

- a) Neutrons in the nucleus only
- b) Protons in the nucleus only
- c) Electrons in the outer shell only
- d) Electrons in all the shells

2. Which of the following is not a characteristic property of ionic compounds?

- a) Solubility in polar solvents
- b) Low melting points
- c) Conduction of electricity in aqueous solution
- d) Fast reactions in solution.

3. The compound with the highest ionic character among the following is

- a) PCl₅ b) CCl₄ c) BCl₃ d) CsCl

4. Why is the hydrogen gas not found in the atmosphere? It readily reacts with

- a) Carbon(IV) oxide b) oxygen c) Nitrogen d) carbon(II) oxide

5. Apart from water, the other product(s) of the neutralization reaction between NaOH solution and nitrogen(IV)

oxide is/are

- a) NaNO₂
- b) NaNO₃
- c) NaNO₃ and HNO₃
- d) NaNO₂ and NaNO₃

6. Silver trioxonitrate(V) on heating, gives

- b) Ag₂NO, N₂
- a) Ag, N₂O and O₂ and O₂
- c) Ag₂O and N₂O
- d) Ag, NO₂ and O₂

7. The most reactive halogen is:

- a) Cl₂ b) Br₂ c) F₂ d) O₂

8. 0.79g of a gas at s.t.p. occupied a volume of 250cm³. What is the relative molecular mass of the gas?

- a. 17 b.32 c.64 d.71

9. The relationship between the density (d) of a gas and the rate (r) at which the gas diffuses is

- a. R=Kd b. r =Kc^{-1/2} c. r =Kd . d. r=Kd⁻¹

10. The pressure exerted by a sample of a gas confined in 5.86dm³ container at 20°C is 4.atm.

what is the number of

moles of the gas in the sample? (R = 0.082dm³ atm moF⁻¹ K⁻¹)

- a. 1.00 b.2.00 c.3.00 d.4.00

11. 50cm³ of hydrogen are sparked with 100cm³ of oxygen at 110°C and 1 atm. If the whole reaction mixture passes

through an alkaline solution of pyrogallol, the volume of the residual gas is

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a. 12cm³ b. 100cm³ c. 75cm³ d. 50cm³

12 The decreasing order of the magnitude of energy changes is

- a. Phase, chemical, nuclear
- b. Chemical, nuclear, phase
- c. Nuclear, phase, chemical
- d. Nuclear, chemical, phase

13. 0.92g of ethanol raised the temperature of 100g of water from 298K to 312K when burned completely. What is

the heat of combustion of ethanol? a. +300kJ mol⁻¹ b. +3000kJ mol⁻¹ c. -300kJ mol⁻¹ d. -3000kJ mol⁻¹ (C = 12; H 1; O=

16, specific heat capacity of water = 4.2kJg⁻¹K⁻¹)

14. The highest level of molecular disorderliness is found in

- a. ice at -10°C b. water at 100°C
- c. steam at 100 C d. ice at 0 C

15. A reaction is spontaneous at all temperature if

- a. $\Delta G=0$ b. $\Delta G>0$
- c. $\Delta S<0$ & $\Delta H>0$ d. $\Delta S>0$ & $\Delta H<0$

16. Which of the following reactions of marble with fastest?

- a. 5g of marble lump at 500°C
- b. 5g of marble powder at 500°C
- c. 5g of marble powder at 25°C
- d. 5g of marble lump at 25°C

17. $A_{(g)} + 2B_{(g)} \rightarrow C_{(g)}$

In the reaction represented by the equation above, the rate of appearance of C is found experimentally to be

independent of the concentration of A and to increase four folds when the concentration of B is doubled. The rate

law for the reaction is

- a. Rate = $K[A]^0[B]^4$ b. Rate = $K[A]^{10}[B]^2$ c. Rate = $K[A][B]^2$ d. Rate = $K[A]^2[B]^0$

18. How is the equilibrium constant for the forward reaction of an equilibrium (K_f) related to that of the reverse react (K_r)?

- a. (K_r) is the additive inverse of (K_f)
- b. (K_r) is the multiplicative inverse of (K_f)
- c. (K_r) is the same as (K_f)
- d. The product (K_r) and (K_f) is zero.

19. What is the concentration of OH ions of an aqueous solution of pH 4.4?

- a. $9.600 \times 10^{-10} \text{ mol dm}^3$
- b. $2.512 \times 10^{-10} \text{ mol dm}^3$
- c. $9.600 \times 10^{-11} \text{ mol dm}^3$
- d. $2.512 \times 10^{-11} \text{ mol dm}^3$

20. An acid and its conjugate base

- a. Are oppositely charged
- b. Differ only by a hydroxide ion
- c. Differ only by an electron
- d. Differ only by a proton

21 A complex salt is

- a. $KAl(SO_4) \cdot 12H_2O$
- b. $Cu(NH_3)_4 Cl_2$

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c. $K_2S_2O_3 \cdot 5H_2O$

d. $Mg(OH)Cl$

22. What happens to the conductivity of an electrolyte as its concentration reduces?

a. Increases b. decreases c. is unaffected d. becomes resistivity

23. If the cost of electricity required to deposit 1g of aluminium is N4.00, how much would it cost to deposit 24g of

copper? (Al = 27, Cu = 64)

a. N27.02 b. n37.02 b. n47.02 D.57.02 d.57.02

24. The overall reaction in an electrochemical cell is $Mg(s) + Cu^{2+}(aq) \rightarrow Mg^{2+}(aq) + Cu(s)$ What is the symbolic

representation of the cell?

25. Which of the following metals can be used as sacrificial cathode for preventing corrosion of a length of iron pipe?

a. Ag b. Cu c. Mg d. Mn

26. A particle that contains 8 protons, 9 neutrons and 7 electrons could be written as

27. The solubility product of a sparingly soluble salt, MX_2 is $1.09 \times 10^{-3} \text{ mol}^3 \text{ dm}^{-3}$ at 25°C . What is the solubility of the salt at

25°C ? a. $3.0 \times 10^{-3} \text{ mol dm}^{-3}$ b. $3.0 \times 10^{-3} \text{ mol dm}^{-3}$ c. $6.0 \times 10^{-3} \text{ mol dm}^{-3}$ d. $6.0 \times 10^{-3} \text{ mol dm}^{-3}$

ANSWER KEY

1C 6D 12D 17C 22A 27B

2D 7B 13D 18A 23A

3D 9B 15D 20A 25C

48 10A 168 21B 26B

EXPLANATION TO THE QUESTIONS

1. It is the electrons in the outer most shell of an atom that take part in bonding and interatomic combination c

2. Ionic compounds are formed between two ions of atoms having a large electronegativity differences e.g. metals

and non-metals. They are usually hard solids with high melting points or liquid with high boiling points (B)

3. Since electropositivity increase down the group, caesium is the only metal in the compounds. PCl_5 , CCl_4 and BCl_3

are all covalent molecules by $CsCl$ is an ionic compound (D)

4. This is due to the fact that hydrogen readily combine with oxygen. Hence, it occurs as water, acids and organic

substances (B)

5. $2NaOH + 2NO_2 \rightarrow NaNO_3 + NaNO_2 + H_2O$

NO_2 is a mixed acid anhydride, it reacts with alkaline to yield a corresponding mixture of dioxonitrate(III) and

trioxonitrate(V) salts (D)

7. Fluorine is the most reactive of the halogen group, this is because it is the most electronegative of all the members

of the group (C) 0.260 dm^3

8. No. of moles of the gas = $\frac{224 \text{ dm}^3}{24 \text{ dm}^3 \text{ mole}^{-1}} = 9.33 \text{ mole}$

Relative molar mass molar mass = mass $0.79 \text{ g} = 76.784$

no. of mols $0.01116 \text{ mole} = 71 \text{ (D)}$

10. Pressure = 4.1 atm

Volume = 5.86 dm^3

Temperature = $20^\circ\text{C} + 273 = 293 \text{ K}$

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= $0.082 \text{ dm}^3 \text{ atm mol}^{-1} \text{ K}^{-1} = 1 \text{ mole (A)}$

11. $2\text{Hsg} + \text{O}_{2(\text{g})} \rightarrow 2\text{H}_2\text{O}(\text{l})$

Reacting: 2 mole 1 mole 2 mole

Starting volume 50 cm^2 100 cm^3

Reacting volume 50 cm^2 25 cm^3 50 cm^3

Volume after sparking - 75 cm^3 50 cm^3

Residual gases = unreacted oxygen + $\text{H}_2\text{O} = 75 + 50 = 125 \text{ cm}^3$

The pyrogallol solution removes the oxygen components of the residual gas. The volume of the residual gas left =

$(125 - 75) = 50 \text{ cm}^3$ (D)

12.D.

13. Heat evolved = mass x specific heat capacity x temperature rise = $100 \text{ g} \times 4.2 \text{ J g}^{-1} \text{ K}^{-1} \times (312.3 - 298) \text{ K} = 6006 \text{ J}$ 0.92

No of mole of ethanol = $46 \text{ g} / 0.02 \text{ mole}$

Combustion of 0.2 mole of ethanol produces 6006 J of heat energy

1 mole of ethanol produces: $6006 \text{ J} / 0.02 \text{ mole}$

$3003 \text{ J mole}^{-1} = 300.3 \text{ kJ mole}^{-1}$

The reaction is exothermic ($-300.3 \text{ kJ mole}^{-1}$) (C).

14. Molecular disorderliness in a substance is the measure of its entropy and entropy increases with increase in

temperature. At 100°C , water molecule becomes more energetic and moves more freely (C).

15. If ΔG is positive ($\Delta G > 0$), the reaction is non spontaneous and $\Delta G = 0$ means the reaction is at equilibrium. A

reaction is spontaneous, if $\Delta G < 0$. This can be achieved at all temperature, if $\Delta H < 0$ (exothermic) and the reaction

occurs with increase randomness ($\Delta S > 0$)

$\Delta G = \Delta H - T\Delta S$

From the Gibbs' equation, ΔG is always less than zero at all temperature if $\Delta H < 0$ & $\Delta S > 0$ (D)

16. The rate of reaction increases with increase in temperature and surface area (B)

17. Rate of appearance of C = Rate of reaction Rate law is represented as $[A]^a [B]^b$ & $[C]^c$ mol/dm³

$R = k[A]^a [B]^b \dots \dots \dots$ (i)

If [A] is doubled & [B] is constant, rate is unaffected, i.e. $[A] = 2a$ & $[B] = b$, $R_2 = R_1$

$R_2 = k(2)^a (b)^b \dots \dots \dots$ (ii)

If [A] is constant & [B] is doubled, Rate is four-fold i.e. $[A] = a$, $[B] = 2b$, $R_3 = 4R_1$

k_r is the multiplicative inverse of k_f (B)

19. $\text{pH} + \text{pOH} = 14$

$4.4 + \text{pOH} = 14$

$\text{pOH} = 9.6$

$\text{pOH} = -\log[\text{OH}^-]$

$9.6 = -\log[\text{OH}^-]$

$[\text{OH}^-] = \text{ant log}[-9.6] = 2.5 \times 10^{-10} \text{ mol/dm}^3$ (B)

The original acid gives up its proton and becomes a conjugate base and those two are oppositely charged (A)

20. $\text{HA} + \text{B} \rightleftharpoons \text{A}^- + \text{HB}^+$ Acid base conjugate conjugate base base

21. Complex salts in which the positive and negative ions are complex or possess a coordinate sphere. In a complex

ion, there is a metal ion that is joined to electron pair donors (ligands) via a coordinate bond.

$\text{KAl}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$ (alum) is a double salt $\text{K}_2\text{S}_2\text{O}_8 \cdot 5\text{H}_2\text{O}$ is a normal salt $\text{Mg}(\text{OH})\text{Cl}$ - is a base salt (B)

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22. Normally, conductivity increase with increase in dilution or decreases in concentration

25. As a principle, the sacrificial cathode metal must be above the metal to be protected in the electromotive series.

The cathode metal goes into solution to form its ion (become corroded) and evolves hydrogen.

Here, the length of

iron is its anode while Magnesium act as Cathode and goes into Solution to form ions while it is

corroded. Therefore,

the iron is protected from rusting.

26 No of Neutron =9

No of Proton = 8

No of electron = 7e

The superscript is the mass no = no of neutron + proton =9+8=17

The Subscript is the Atomic number = no of proton = 8

i.e one electron is lost with the introduction of positive sign (+) at superscript of the element.

This can be

represented as (B)

27. $MX_2 \rightleftharpoons M^{2+} + 2X^-$

Initially: X o O

At the end of the reaction: X x 2x Solubility product. $K_{sp} = [M^{2+}] [X^-]^2$

$1.08 \times 10^{-7} \text{ mol}^3 \text{ dm}^{-9} = (x)(2x)^2$

$1.08 \times 10^{-7} \text{ mol}^3 \text{ dm}^{-9} = 4x^3$

UNIVERSITY OF JOS 2009 POST UME TEST

CHEMISTRY

1. The flame used by welders in cutting metal is

- a) Butane gas flame
- b) Acetylene-hydroflame
- c) Kerosine flame
- d) Oxy-acetylene
- e) Oxygen flame

2. Consequitire members of an alkane homogenous series differ by

- a) CH b) CH₂ c) CH₃ d) C₃H₃ e) CH₂₊₂

3. Which of these will dilute in HCl? Mg, Fe, Pb and Cu

- b) Mg, Fe and Cu d) Mg and Fe only
- a) All the metals
- c) Mg, Fe and Pb
- e) Mg only

4. Stainless steel is an alloy of

- a) carbon, iron and lead
- b) carbon, iron and chromium
- c) carbon, iron and copper
- d) carbon, iron and silver
- e) carbon and iron only

5. What volume of 0.50M H₂SO₄ will exactly neutralize 20cm³ of 0. 1M NaOH solution?

- a) 2.0cm³ b) 5.0cm³ c) 6. 8cm³ d) 8.3cm³ e) 10.4cm³

6. A gas that can behave as a reducing agent towards chlorine and as an oxidizing agent toward hydrogen suiphide is

- a) O₂ b) NO c) SO₂ d) NH₃ e) CO₂

7. An element that can exist in two or more different structure forms which possess the same chemical properties is

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said to exhibit

a) polymerism b) isotopy c) isomorphism d) isomerism e) allotropy

8. The hybridization of the carbon atom in ethyne is

a) sp b) sp^2 c) sp d) sp^3 e) ES

9. In the Haber process for the manufacture of ammonia, finely divided iron is used as

a) an ionizing agent b) a reducing agent c) a catalyst d) a dehydrating agent e) an oxidizing agent

10. Nitrogen can best be obtained from a mixture of oxygen and nitrogen by passing the mixture over

b) reddish brown colour develops

c) solution remains colourless

d) blue colour is seen

11. At STP how many litres of hydrogen can be obtained from the reaction of 500cm³ of

0.5M H_2SO_4 excess zinc metal a) 22.4dm³ b) 11.2dm² c) 65dm² d) 5.6dm³ e) 0.00dm³

12. Tetraoxosulphate(VI) ions are final test using

a) acidified silver nitrate

b) acidified barium chloride

c) lime-water

d) dilute hydrochloric acid

e) acidified hard nitrate

13. Which of the following is NOT the correct product formed when the parent metal is heated in air?

a) calcium oxide (CaO)

b) sodium oxide (Na_2O)

c) copper(II) oxide (CuO)

d) aluminium oxide (Al_2O_3)

14. Which of the following roles does sodium chloride play in soap preparation? It

a) reacts with glycerol

b) purifies the soap

c) accelerates the decomposition of the fat and oil

d) separates the soap from the glycerol

e) converts the fat acid to its sodium salt

15. The function of sulphur during the vulcanization of rubber is to

a) act as catalyst for the polymerization of rubber molecules

b) convert rubber from thermosetting to thermo plastic polymer

c) form chains which bind rubber molecules together

d) break down rubber polymer molecule

e) shorten the chain length of rubber polymer

16. An element with atomic number twelve is likely to be

a) electrovalent with a valency of 1

b) electrovalent with a valency of 2

c) covalent with a valency of 2

d) covalent with a valency of 4

17. Which of the following is an acid salt?

a) $NaHSO_4$ b) Na_2SO_4 c) CH_3CO_3 d) Na_2S_5 e) C_2H_5

18. Which of the following compounds is NOT formed by the action of chlorine on methane?

a) CH_3C_3 b) C_2H_5Cl c) CH_2Cl_2 d) $CHCl_3$ e) CH_4Cl

19. Starch can be converted to ethyl alcohol by

a) distillation b) fermentation c) isomerization d) cracking e) osmosis

20. How many isomers can be formed from organic compounds with the formula C_3H_8O

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a) 2 b) 3 c) 4 d) 5 e) 1

21. When platinum electrodes are used during the electrolysis of copper(II) tetraoxosulphate (VI) solution, the

solution gets progressively a) acidic b) basic c) neutral d) atmospheric

22 Which of the following physical properties decreases across the periodic table

a) Ionization potential. b) electron affinity c) electron negativity d) atomic radius

e) electro-positive reaction

23. Which of these has the lowest pH value?

a) Calcium trioxocarbonates

b) Sodium trioxocarbonate (IV)

c) Hydrochloric acid

d) Ethanoic acid

e) Hydrocarbon acid

24. Which of the following is used in fire extinguishers

a) carbon (II)

b) carbon (VI) oxide

c) sulphur (IV) oxide

d) ammonia e) sulphur (III) oxide

25. Mortar is NOT used for under water construction because

a) It hardens by loss of water

b) Its hardening does not depend upon evaporation

c) It requires concrete to harden

d) It will be washed away by the flow of water

e) It softens when exposed.

ANSWER KEY

1. D 6.C 11.D 16.B 21.A

2.B 7.E 12.B 17.A 22.D

3.D 8.C 13.B 18.B 23.C

4.B 9.C 14.D 19.B 24.8

5.A 10.C 15.C 20.B 25.D

EXPLANATIONS TO THE ANSWERS

1. Oxy-acetylene flame is made from the mixture of oxygen and acetylene (ethyne) to produce a gas that burns at very high temperature (D)

2. Consecutive member of an alkane homologous series differ by CH_2 . For example, CH_4 and C_2H_6 differ by CH_2 (B)

3. Mg, Fe will dissolve in dilute HCl to liberate hydrogen gas. Pb and Cu but not dissolve or react with dilute HCl and H_2SO_4 (D).

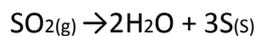
4. Alloy of metal is primarily formed to improve the quality of the metallic compound to desired properties. Stainless steel is formed in order to have hard, corrosion resistant and very attractive in appearance. It is formed from the combination of carbon, chromium and steel. Fe and C are used for ordinary steel (B)

5. $\text{H}_2\text{SO}_4 + 2\text{NaOH} \rightarrow \text{Na}_2\text{SO}_4 + 2\text{H}_2\text{O}$ 1 mole 2 mole 1 mole 2 mole Concentration of acid

6. The sulphur(IV) oxide reduces the coloured solution of Cl_2 , Br_2 and I_2 to the colourless of their ionic compound.

$\text{Cl}_{2(aq)} + \text{SO}_2 + 2\text{H}_2\text{O} \rightarrow \text{SO}_2 + 4\text{H}^+ + 2\text{Cl}^-$ and as an oxidizing agent in the presence of stronger reducing agent $2\text{H}_2\text{S} +$

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7. E

8. Ethyne is formed by the overlapping of S-orbital of hydrogen and P-orbital of the carbon with 3 σ - bonds and 2 π - bonds (sp hybridized) (C)

9. (C) - check. Chemistry textbook for the preparation of ammonia.

10. Potassium hydroxide is used to remove droplet of water vapour. Magnesium cannot be used because it will

combine with nitrogen to form nitride. $\text{Mg}_3 + \text{N}_2 \rightarrow \text{Mg}_3\text{N}_2$

Heated phosphorous will react with only oxygen to form phosphorus(V) oxide, P_4O_{10} (C)



1mole 1mole 1mole 1 mole

no of mole of $\text{H}_2\text{SO}_4 = 500\text{dm}^3$

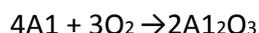
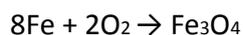
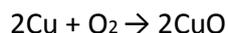
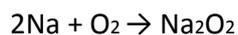
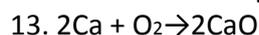
$\times 0.5\text{mole/dm}^3$

$100 = 0.25$ mole Since 1 mole of H_2SO_4 produces 1 mole of H_2 0.25 mole of H_2SO_4 will also produce 0.25 mole of H_2

volume of gas = $0.25\text{mole} \times 22.4\text{dm}^3 \text{mol}^{-1} = 5.6\text{dm}^3$ (D)

12. (B) $\text{Ba}^{2+} + \text{SO}_4$

$2- \text{BaSO}_4$ — white precipitate.



Sodium oxide can only be prepared in limited supply of oxygen, if not the product formed is Na_2O_2 .

14. Soap preparation involves the addition of fatty acid to concentrated NaOH — solution.

Sodium chloride is added

to decrease the solubility of the soap (i.e. alkaline salt), so that it separates out as a hard cake on the surface on

cooling (D)

15. Vulcanization is the heating of rubber (styrenebutadiene polymer) with sulphur.

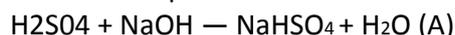
Hence, disulphide bonds cross-link parallel polymers- chains of the rubber at the double bond positions of the repeat

units thereby resulting into harden and high tensile strength SBR (C).

16. An element with atomic number 12 has 2- electrons in its valency, thus makes it belongs to s-block element

(metals) in the periodic table. Metallic elements are known to form electrovalent bond (B).

17. Acid-salt is formed by incomplete displacement of hydrogen ion from an acid by metal, as we have in option A.



18. The product of chlorination of methane is formed by substitution reaction, $\text{C}_2\text{H}_5\text{Cl}$ is formed by the chlorination of ethane not methane (B)

19. Fermentation is the slow decomposition by micro-organism of large organic molecules (such as starch) into

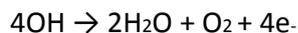
smaller molecular (such as ethanol) (B).

I and II are positional isomer while I, II, III are functional group isomer (B)

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$\text{Cu}^{2+}/\text{H}^{+}$ - migrate to the cathode while SO_4^{2-} & OH^- migrates towards the anode. At the anode, OH^- is lower in the

electrochemical series so it is discharged in preference to SO_4



Oxygen is produced at the anode. The discharge of OH^- disturbs the ionic equilibrium of water; Therefore H^+ is

produced in excess. This brings increase in acidity at the anode.

At the cathode, Cu^{2+} is discharged in preference to H^+ $\text{Cu}^{2+} + 2\text{e}^- \rightarrow \text{Cu(s)}$

Copper is deposited and the ionic equilibrium is not altered. The electrolyte solution becomes more acidic (A).

22. Atomic radius decrease across the periodic table, this is because it is noted that the attraction by the nucleus

increases more rapidly across the period than the forces of mutual repulsion between electrons.

As a result, the

radius of the atom decreases with increasing atomic number (D).

23. HCl is a stronger acid, than ethanoic acid, the measure of acidic, pH value of HCl will be lower than that of the

ethanoic acid (C).

24. CO_2 is used in fire extinguishers because it does not support combustion. It is produced from calcium carbonate

(B).

25. Mortar is prepared by mixing one part of slake lime and three parts of sand with water. The mixture hardens or

sets to bind the grains of sand by reacting with carbon(IV) oxide in the atmosphere to form the trioxocarbonate.

Mortar is used to bind the brick in walls and buildings. $\text{Ca(OH)}_2 + \text{CO}_2 \rightarrow \text{CaCO}_3 + \text{H}_2\text{O}$ (D)

UNIVERSITY OF JOS 2010 POST UME TEST

CHEMISTRY

1. Whose experiment showed that the atom has a tiny positively charged nucleus?

a) Thompson b) Rutherford c) Millikan d) Dalton

2. Which of the quantum number divides shells into orbitals?

a) Principal b) subsidiary c) magnetic d) spin

3. Which of these statements is/are correct of a proton?

i. The mass of a proton is one-twelfth the molar mass of carbon

ii. The mass of a proton is 1840 times the mass of an electron

iii. The mass of a proton is 1.0008g

a) i only b) i, ii and iii c) i only d) ii and iii only

4. The following are chemical entities identifiable during qualitative analysis

i) SO_4^{2-}

ii) H_3O^+

iii) NH_4^+

iv) OH^- . Which of them can be detected by litmus paper?

a) ii and iv only b) ii only

c) i & iii only d) i & ii only

5. i) NaHCO_3 ii) NaHSO_4 iii) NaCl . Which of these will dissolve in water to give alkaline solution?

a) i, ii and iii b) ii only c) i only d) i & ii only

6. Burning of 0.46g of ethanol produced heat that raised the temperature of 100g of water by 30°C . Calculate the

heat of combustion of ethanol. $\text{C}_2\text{H}_5\text{OH}$. (C = 12, H = 1; O = 16)

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- a) 50kJmol^{-1} b) 900kJmol^{-1} c) 1200kJmol^{-1} d) 1000kJmol^{-1}
7. When chlorine is bubbled into potassium iodine solution
a) A white precipitate is seen
8. $\text{PCl}_5 \rightleftharpoons \text{PCl}_3(\text{g}) + \text{Cl}_2$. In reaction above, an increase in pressure will
a) Decelerate the reaction
b) increase the yield of PCl_3
c) increase the yield of PCl_5
d) accelerate the reaction.
9. A saturated solution of silver trioxocarbonate(IV), was found to have concentration of $1.30 \times 10^{-5}\text{mol dm}^{-3}$. The solubility product of trioxocarbonate (IV) is
a) 8.79×10^{-10} b) 1.69×10^{-10} c) 1.82×10^{-10} d) 9.84×10^{-10}
10. A zinc half-cell is connected to an iron half-cell through a salt bridge and both are also connected through a copper wire. At which electrode is reduction taking place and which electrode is positively charged?
a) Zinc, zinc b) iron, iron c) zinc, iron d) iron, zinc
11. Which of the following is the difference between an electrolytic cell X and electrochemical cell Y
a) Anode in X is -ve while anode in Y is +ve
b) In X, oxidation takes place at the anode while in Y reduction takes place at the anode
c) In X, anode is positive while in Y anode is negative.
d) In X, chemical energy is converted into electrical energy while in Y electrical energy is converted into chemical energy.
12. What mass of bromine will saturate completely 6.8g of 3-methylbut-1-yne (H = 1; C = 12; Br = 80)
a) 16g b) 12g c) 32g
13. 24g were mixed and exploded. Determine the volume of the mixture when brought back to the original conditions of measurements. a) 125cm^3 b) 110cm^3 c) 75cm^3 d) None of these
14. Sulphur
a) Forms two alkaline oxides
b) is spontaneously inflammable
c) burns with a blue flame
d) conducts electricity in the molten state.
15. Candidate devised the following for the separation of the components of some mixtures
i. Components of ink, principles involved is chromatography
ii. Components of water and kerosene principle involved is separating funnel
iii. Components of iodine and sodium chloride, principles involved is sublimation.
In which of the above is the principle correct? a) i only b) ii only c) iii only d) i, ii & iii
16. Which of the following procedures will separate a mixture of sand, sodium chloride and iodine into its components?
a) Add water, filter, sublime, evaporate to dryness
b) Add water, sublime, filter, evaporate to dryness
c) Sublime, filter, add water, evaporate to dryness
d) Sublime; add water; filter; evaporate to dryness

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17. The type of bonds in ammonium chloride are
a) Covalent and electrovalent
b) dative and covalent
c) dative and electrovalent
d) covalent, dative and electrovalent
18. Which of the following types of bonding does not produce a compound
a) ionic bonding
b) covalent bonding
c) dative bonding
d) metallic bonding
19. The combining powers of HCO_3^- ; O^{2-} ; Na^+ ; Cl^- ; respectively are
a) -2 +1, -1. +1 b) 1.2.1 c) +1. -2, +1.1 d) none of these
20. What is the chemical formula of the compound containing 6.02×10^{23} atoms of hydrogen, 35g of chlorine, and 4 moles of oxygen atoms? a) HCl_4O c) HCl_3O_4
21. 200cm³ of hydrogen were collected over water at 30 and 740mm of Hg. Calculate the volume of the gas at s.t.p. if the vapour pressure of water at the temperature of the experiment is 14mm of Hg.
a) 168.25cm³ b) 176.40 cm³ c) 185.46 cm³ d) 172.14 cm³
22. A given mass of gas occupies a certain volume at 300K. At what temperature will its volume be double?
a) 400K b) 480K c) 550K d) 600K
23. The basic assumption in the kinetic theory of gas that "forces of attraction and repulsion between gaseous molecules are negligible" implies that:
a) Molecules will continue their motion indefinitely
b) Gases will occupy any available space
c) Gases can be compressed
d) None of the above
24. Which of the following is true of a sample of hydrogen gas whose mass is 4.00g under a pressure of 2atm and a temperature of 27°C? ($H = 1$, $R = 0.032 \text{ lit atm. Mol}^{-1} \text{ dega}$)
Its volume is 24.6 litres
b) it contains 6.02×10^{23} molecules
c) it exists as atoms because of temperature d) none of the above
25. Which of the following combination of reagents will react to give chlorine gas?
a) Sodium chloride, conc. H_2SO_4 and Manganese(IV) oxide
h) Potassium tetraoxomagnate
b) HClO d) HCl_2O_4
c) Potassium trioxochloride(v) and conc. H_2SO_4
d) Potassium tetraoxomagnate(VI) and conc. H_2SO_4 .

ANSWERS KEY

1B 6C 11C 16D 21D
2B 7B 12B 17D 22D
3B 8C 13A 18D 23D
4C 9A 14C 19B 24A
5C 10C 15D 20C 25A

EXPLANATIONS TO THE QUESTIONS.

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1. Rutherford suggested an atomic model (the nuclear model) in which an atom has a small-positively charged centre (nucleus). where nearly all the mass is concentrated, surrounding the nucleus is a large space (extra-nuclear point) containing the electrons (B)
2. The subsidiary or azimuthal quantum number, l has integral values ranging from 0 to $(n - 1)$. The electrons with subsidiary quantum numbers 0, 1, 2, and 3 are usually referred to as the s, p, d and f — electrons respectively. Thus, this quantum number shows how many energy level that are in each electron shell (B)
3. (B) — check relevant chemistry for clarification.
4. NH_4^+ will release NH_3 gas (basic) while SO_4^{2-} will release SO_2 gas (acidic) (C)
5. $\text{NaHCO}_3 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{CO}_3 + \text{NaOH}$
 $\text{NaHSO}_4 + \text{H}_2\text{O} \rightarrow \text{Na}^+ + \text{SO}_4^{2-} + \text{H}_3\text{O}^+$
NaCl is neutral (C)
6. $\Delta H = mc\theta = 100\text{g} \times 4.18 \text{ J } ^\circ\text{C}^{-1} \times 303\text{K}$
 $21 = 127,260\text{J}$ 127.26 0J
No of mole = 0.01mole 0.0-1 ,na
 $= 12,726,000\text{Jmol}^{-1} = 12,726\text{kJmol}^{-1}$ (exothermic)
7. $\text{Cl}_2 + 2\text{KI} \rightarrow 2\text{KCl} + \text{I}_2$
The colouration is due to the formation of iodine (B)
8. $\text{PCl}_5(\text{g}) \rightarrow \text{PCl}_3(\text{g}) + \text{Cl}_2(\text{g})$
Since the products are in gaseous form, increase in pressure will lead to decrease in volume, this force the products to move closer and combine to form parent compound, thereby cause increase in the yield of PCl_5 (C) = $(2.6 \times 0.5\text{mol}/\text{dm}^3) \times (1.30 \times 10^{-5} \text{ mol}/\text{dm}^3) = 8.788 \times 10^{-5}\text{mol}^3\text{dm}^9$ (A)
10. Iron (Fe) is below zinc in the electrochemical series, hence iron is a less electropositive element compared to zinc. This makes zinc to be a stronger reducing agent since reduction takes place at the cathode, zinc is used as cathode while iron will be anode (C)
11. In electrolyte cell, the cathode is the negative electrode while anode is the positive electrode. In electrochemical cell, the cathode is positive electrode while the anode is negative (C)
12. $\text{CH}_3\text{CH}(\text{CH}_3)=\text{CH}+\text{Br}_2 \rightarrow \text{CH}_3\text{CH}(\text{CH}_3)\text{CBr}_2-\text{CBr}_2$
1mole 2mole 1mole 68
No. of mole = 68 = 0.10mole
3 — methylbut-1-yne
1 mole of 3-methylbut-1-yne requires 2 moles of Br_2
0.10 mole of 3-methylbut- 1 -yne produces 2×0.10 of Br_2
 $1 = 0.20$ mole of Br_2
Mass of $\text{Br}_2 = 0.2 \times 160$ 32grams (B)
13. $\text{C}_4\text{H}_{10} + 2 \text{O}_2 \rightarrow 4\text{CO}_2 + 5\text{H}_2\text{O}$
Reacting mole 1mole 4 mole 5 mole
Available vol. 10cm 100cm³
Reacting vol. 10 cm³ 65cm³
40cm³ 35cm³—

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Residual gas = 35 + 40 + 50 = 125 cm³ (A)

14. When sulphur is heated in a partial supply of air, it burns with bright blue flame to form sulphur(IV) oxide and

small amount of SO₃ $S_{(s)} + O_{2(g)} \rightarrow SO_{2(g)}$

15. (D)

16. Heat the mixture to sublime iodine which will go into gaseous form and collected separately.

The left mixture is

dissolve in water while the salt dissolve in water and it is filtered to separate sand from the mixture while the

residual is heated to dryness to recover the NaCl (D)

17. In NH₄Cl, there is ionic bond between NH₄⁺ & Cl⁻. There are three pure covalent bonds and one coordinate

covalent (dative) bond. The bond types in NH₄Cl are ionic, covalent and coordinate covalent (three types) (D) (D)

Combining power of HCO₃⁻ = 1 O=2

Alkaline metal, Na = 1 Halogen, Cl =1 (B)

20. 6.02×10^{23} atoms of hydrogen give 1mole of hydrogen 35g of chlorine give 1mole of chlorine. 4moles of oxygen

atoms give 4 oxygen atoms Combination give HClO₄ (C)

21 $P_1 = 740 - 14 = 726 \text{ mmHg}$

$V_1 = 20 \text{ cm}^3$

$T_1 = 30^\circ\text{C} + 273 = 303\text{K}$

$P_2 = \text{s.t.p} = 760 \text{ mmHg}$

$T_2 = \text{s.t.p} = 273\text{K}$

$V_2 = PVT$