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UNIVERSITY OF AGRICULTURE MAKURDI POST UME PAST QUESTIONS AND ANSWERS

FROM INCEPTION, 2005 – DATE

PREFACE

This booklet is compiled to assist potential candidates of University of Agriculture Makurdi to have a thorough

revision for the subsequent POST-UME screening examination.

It is a well known fact that adequate preparation combined with a thorough revision of past questions leads to

success in examination. Candidates are advised to use this booklet which contains all the subject combination

effectively while preparing for their APTITUDE TEST.

The compiler of the booklet does not claim 100% correctness of the solutions given but users will without doubt find this booklet relevant to their success in the examinations

We wish you all good luck!!

GENERAL INSTRUCTIONS

TIME ALLOWED

1 1/4 HOURS

This exercise consist of two sections section A and section B. section A is compulsory for all candidates. It consist of questions in the use of English and chemistry. Section B consist of questions in three subjects. However, candidates are expected to answer questions in only two subjects considered relevant to their degree course. Candidates **MUST**

CLEARLY SPECIFY ON THEIR ANSWER SHEETS the following

(i)

JAMB registration number

(ii)

Name of candidate

(iii)

JAMB score

(iv)

Degree course of choice (1st and 2nd)

(v)

Subjects taken and their corresponding codes

(vi)

Remedial number (if applicable)

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November 12, 2005

ENGLISH LANGUAGE

Read the passage and answer the questions 1 – 5

Standard English refers to the authoritative and correct usage of the language, the medium of expression for government and expression. Its opposite is a dialectal variant of the language, that is, accepted and recognized words, expressions and structures peculiar to a smaller group of language users who are generally set apart from standard usage by cultural group or geographical region. For example, Nigeria, America, Irish and British English differ from one another in many respects and each is identifiable, yet in every case the standard variety approaches a single and hypothetical classification known as international English. As one moves towards informality and away from the observance of strict rules, emphasis falls on the difference between dialects. In addition to American English being distinguishable from British English, it is also true that British English is not uniform within the United Kingdom. The level of formality is determined by education and aspiration, while dialects vary from region to region.

1. The author refers to standard English as

a. A dialectal variant of English

b. An authoritative style of usage

c. The orthodox and accurate usage of the language

d. The accepted and recognized words expressions and structures, peculiar to a particular smaller group of language users.

2. One characteristics of a dialect as mentioned in the passage is

a. Informality

b. Possession of various forms

c. Distinction from British English

d. Restricted area of usage

3. According to the author, Nigeria, American, Irish and British English can be regarded as

a. Registers

b. Standards

c. Styles

d. Languages

4. According to the passage, the international English is

a. A kind of arbitrary classification

b. An imaginary classification

c. An informal standard

d. A recognized formal standard

5. The observance of strict rules is a feature of

a. Formality

b. Dialect

c. Languages

d. Unconventionality.

In each of the questions 6 -15, fill the gap with the most appropriate option from the list following the gap(s).

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6. Either Terfa or you ……[A. were B. are C. have D. is] to go

7. She has the …… [A. elison B. illusion C. delusion D. allusion] of being intelligent when in fact she is not

8. He was angry with me ……. [A. on. B. for C. of D. at] being treated nonchalantly.

9. …….. [A. if he did this B. if he could do this C. if he were doing this D. if he had done this] he would have been convicted.

10. What saved her was the fact that she ……[A. had clinged B. clung C. clinged D. clang] to the side of

the boat.

11. She had been here……. [A. since B. for C. from D in] the past three years

12. She was…….weak……..[A. so/that B. too/that C. very/that D. so/when] he could not climb the

stairs.

13. The hospital can now boast of more ……[A. women doctor B. woman doctors C. women

doctors D. woman's doctors]

14. He is one of those who ……[A. teaches B. is teaching C. are teaching D. teach] in my school.

15. It was an …….moment for us to be ……..[A. opportune/privileged B.

opportuned/privileged C. opportune/opportune D. opportuned/opportune] to welcome the vice chancellor.

In questions 16 – 20, choose the option nearest in meaning to the word(s) or phrase (s) underlined.

16. The driver on seeing the traffic warden was hesitant to start the engine

a. Slow

b. Unable

c. Anxious

d. Reluctant

17. The musician's popularity is beginning to decline

a. Change

b. Wane

c. Slide

d. Disappear

18. Many of the workers hired for firing the furnace had themselves fired as a result of the unfortunate accident a. Got themselves burned accidentally

b. Jumped into the fire themselves

c. Got themselves sacked from their jobs

d. Were sacked from their jobs

19. Many candidates now apply to read law because it is a lucrative profession

a. Brings plenty of profit

b. Brings high prestige

c. Brings quick money

d. Brings plenty knowledge

20. The tasks was herculean

a. Irregular

b. Related to Hercules

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c. Stimulating

d. Demanding

ANSWERS TO 2005 ENGLISH

1. C

11.
B

2. D

12.
A

3. C

13.
C

4. C

14.

D
5. B

15.
B
6. D

16.
A
7. B

17.
B
8. B

18.
A
9. D

19.
A
10. B

20.
D

THURSDAY, SEPTEMBER 28TH,
2006 USE OF ENGLISH (001)

Politics in pre-colonial times did not involve the partisan type of electioneering campaign that we now have. The society was ruled by a king or an emir and his traditional chiefs or by the council of elders.

A host of unsung and unrecorded regents and at times women village rulers abound especially in the present Ondo

State where some influential traditional female chiefs and regents still exist. The history of the various towns and villages of the period could boast of women who were actively engaged in the running of government.

In the Igbo society, a rise to leadership position was through demonstrated ability in fostering societal survival rather than heritage. Women's voice in the politics of each clan was given focus through the guild of daughters or the market women's guild. Women through these organs could make their feeling known on any issue affecting their community as a whole or females in particular. Thus unpopular edicts or decrees could be revoked or revised as a

result of mounted pressure from these female associations. No decision was usually taken by the men without prior consultation with the leaders of the women's groups.

It must be however emphasized that the degree of women's participation in politics was much limited when compared with that of men.

1. According to the author, electioneering campaign is the approach

a. Best used in politics

b. Used in pre-colonial politics

c. For choosing kings and emirs

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d. Currently in use.

2. From the passage, it is obvious that women participated in politics

a. On equal basis with men

b. As leaders of men

c. To a limited extent

d. As chiefs and regents

3. Political electioneering in the passage means

a. Playing of politics

b. Maneuvering in politics

c. Studying of politics

d. Steering political events

4. Which of the following is implied in the passage?

a. Women are not politicians

b. Women should be confined to the home

c. Women are capable of political leadership

d. Post-colonial politics should not involve women

5. A suitable title for this passage is

a. Women in politics

b. Champion of women libration

c. Great women of yesteryears

d. Electioneering campaigns

In questions 6 to 15 choose the word(s) or phrase(s) which best fills the gap(s)

6. The child's recent training has not been very effective; he is likely to ……..To his old habits

a. Revert
b. Convert
c. Defiance
d. Disobedience

7. The drummers struck their drums with great efforts and the surging crowds of dancer …… and …… the grounds around the place

a. Strutted/thumped
b. Kicked/stamped
c. Thumped/licked
d. Stroked/thumped

8. The water is not good for drinking. It's been …….. by dead rabbit.

a. Contaminated
b. Infested
c. Spoilt
d. Diseased

9. Are you sure he prefers a horse ride …… a walk

a. Than to take
b. To taking

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c. Instead to take
d. Than

10. The old lady prefers……. Bread…… clothes

a. To bake/than making
b. To bake/to making
c. Baking/to making
d. Baking/than to make

11. The host insisted on ……. What he call "a little gift"

a. Me to accept
b. Me accepting
c. my accepting
d. my acceptance

12. We heard the ……. of breaks which was followed by a crashing noise

a. screening
b. screeching
c. scraping
d. streaking

13. if you don't want to …… your car to robbers, then don't travel at night

a. loose
b. loss
c. lose

d. lost

14. the beautiful plan made for the expansion of the business fell …… as soon as the manager died

a. down

b. out

c. in

d. through

15. …….. are good friends

a. He and i

b. I and him

c. I and he

d. He and me

In each of questions 16 to 20, select the options that explains the information conveyed in the sentence

16. The stadium had a capacity crowd in spite of the weather

a. The weather favored the crowd at the stadium

b. The crowd defied the weather to fill the stadium

c. The stadium was not filled because of the weather

d. The crowd loved the weather at the stadium

17. Amana couldn't have attended lectures yesterday

a. It was possible that Amana attended lectures

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b. It was possible that Amana didn't attend lectures yesterday

c. It was impossible that Amana attended lectures yesterday

d. It was impossible that Amana didn't attend lectures yesterday

18. The conference is biennial

a. The conference is held twice a year

b. The conference is held twice in every two years

c. The conference is held once every other year

d. The conference last for at least two years

19. Only two ministers survived the recent cabinet reshuffle.

a. In the recent changes in government, only two ministers

b. In the recent changes in government, all but two ministers remained alive

c. In the recent changes in government, all but two ministers retained their posts

d. In the recent changes in government, all but two ministers were sacked.

20. Bassey is as hard as nails

a. Bassey is very strong

b. Bassey is very brave

c. Bassey is very determined

d. Bassey is unsympathetic

In each of questions 21 to 25, fill each gap with the most appropriate option from the list following the gap.

21. We ought to have visited the governor……..

a. Isn't it

b. Ought'nt we

c. Should'nt we

d. Haven,nt we

22. I had hardly ……..

a. Lay

b. Lied

c. Lain

d. Laid

23. A sterile range of mountains broken at intervals by deep ravines……..

a. Enclose

b. encloses

c. Cover

d. covers

24. all the cattle on Lamidi's farm……

a. is tick-free

b. are tick-free

c. is ticks-free

d. are ticks-frees

25. he saw the play and so ……

a. was she

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b. had she

c. should she

d. did she

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ANSWERS TO ENGLISH 2006

1. D

11.
B

21.
A
2. C

12.
B

22.
A
3. D

13.
C

23.
B
4. C

14.
D

24.
B

5. A

15.
A

25.
D
6. A

16.
B
7. B

17.
C
8. A

18.
A
9. B

19.
C
10. B

20.
C

SATURDAY OCTOBER 6TH 2007

ENGLISH LANGUAGE

Read the passage carefully and answer the questions that follow

The preparation which a study of the humanities can provide stems from three observations about education in our

world of accelerating social and technological change. First with the rate of change we cannot hope to train our

students for specific technologies. That kind of vocational education is obsolescent. By the time, the specific training will have been completed, the world will have moved on if our education consists of narrow training, we will not be prepared to change second and paradoxically, what our students desire from their education is preparation for

specific careers, business, engineering, medicine, computer programming and the like, but we will not be able to train them for life-long career. Their confronting the depressed job market gives our students a certain anxiety, but the solution they seek in vocational training is not sufficient. Third, we sense in our students a narrowing materialism, with the good life defined in terms of material comfort. Education then means learning to do a job which will make money. I see in this definition a limiting sense of what education and the life thus offer, a definition which excludes joy and meaning –our approach to the study of the humanities responds to these three related problems. In our

changing, yet narrowing world, the teaching of the humanities finds one powerful justification – it teaches students how to think.

1. Our world of accelerating social and technological change mean that

a. Our world is moving too fast socially and technologically

b. Our world is going through more rapid, social and technological change

c. The social and technological change is more exhilarating than before

d. The social and technological change is accelerating our world

2. What is the major weakness of training students for specific technologies?

a. It trains students for only one type of career

b. It helps students to acquire money later when they are employed

c. It makes them anxious for a job in the market

d. It cannot help students to cope with the rapid changes in the world

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3. We sense in our students "a narrowing materialism" means that our students' concept of education is the

one that

a. Prepares them for money, joy and meaning

b. Makes them ready to confront the depressed job market

c. Only prepares them to acquire material comforts

d. Trains them for life long career

4. According to the writer a study of the humanities

a. Is accepted by present day students as essential

b. Prepares students for specific careers

c. Provides a missing link in the technological education of our students

d. Is the best solution to the problem of unemployment

5. What type of education does the writer advocate for our students?

In each of questions 6 -15, fill each gap with appropriate option from the list following the gap

6. …… (a. conclusively, b. to conclude c. in conclusion d. the conclusion), sign post

words are useful to the readers

7. Every programming language and software package ……. (a. have its b. have their c. has its d.

has their) limitations.

8. It was …….. (a. they b. them c. those d. theirs) who fought the civil war

9. Tosin refused to be …….. (a. sad b. placated c. frustrated d. indifferent) though he has written the same exams three times

10. The university has a large collection of sporting ……. (a. equipment b. equipments c. costumes

d. aids)

11. A survey of opinions on how pupils feel about their teachers ……. (a. has been b. have been

c. are being d. is being) carried out

12. One of the …….. (a. school of thought suggests b. schools of thought suggest c. school of thoughts

d. schools of thoughts suggests) selective marking of errors

13. the police are looking for ……. (a. two big cars black b. two cars big black c. two big black

cars d. two black big cars)

14. we are ……. To receive your letter and to know that you are …….. (a. happy/in good

health b. grateful/sound c. pleased/all well d. appreciative/swimming in good health)

15. The choice to go to university or not is …… (a. yours' b. your c. yours d. your's)

In each of questions 16 – 20, select the option that best explains the information conveyed in the sentence

16. Tom ought not to have told me

a. Tom did not tell me but he should

b. Perhaps Tom was wrong to have told me

c. Tom told me but it wrong of him

d. It was necessary for Tom not to tell me

17. He can't be swimming all day

a. It's possible he is not swimming now

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b. It's very likely he is swimming now

c. He does not have the ability to swim all d ay

d. He would not like to swim all day

18. If I were the captain, I would have led the team to victory

a. I was not the captain, but l led the team to victory

b. I was the captain but I did not lead the team to victory

c. I was not the captain and I did not lead the team to victory

d. I was the captain and I led the team to victory

19. Between you and me, I would say that the equipment has outlived its usefulness

a. I believe that the equipment is no longer useful to either you or me

b. I believe that the equipment continues to be useful to either you or me

c. My idea of the usefulness of the equipment should remain known only to the two of us

d. My idea of the usefulness of the equipment is shared by both of us.

20. The president of the club said that he would cross the bridge on getting there

a. He was waiting for an opportunity to take a decision

b. When he got to the river he would build a abridge across it

c. He would take a decision at the appropriate time

d. When he got to the river he would cross at the bridge

In each of questions 21 -23, choose the word that does not have the same vowel sound as the others

21. A. sun

B. shun

C. son
D. short
22. A. mere
B. Hair
C. weird
D. hear
23. A. naught
B. north
C. spot
D. law

Choose the option that has the same consonant sound as the one represented by the letter(s) underlined

24. Teeth:
A. tough
B. thief
C. those
D. tank
25. Effort:
A. rough
B. ghost
C. devil
gharial

ANSWERS TO ENGLISH 2007

1. B

14.
A
2. D

15.
C
3. C

16.
C
4. A

17.
A
5.

18.
C
6. C

19.
D

7. C

20.
C
8. B

21.
A
9. C

22.
C
10. A

23.
C

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11. A

24.

12. B

25.
A

13. C

SATURDAY, JULY 19TH 2008
001 USE OF ENGLISH
CAREFULLY READ THHIS SHORT POEM AND ANSWER THE QUESTIONS. CHOOSE THE MOST APPROPRIATE OPTION FOR
EACH QUESTION
1. she dwelt among the untrodden ways
beside the springs of dove
a maid whom there were non to praise
and very few to love

2. a violet by a mossy stone
half-hidden from the eye!
Fair as a star, when only one
Is shinning in the sky
3. she lived unknown and few could
know when Lucy ceased to be
but in her grave, and oh, the difference to me.
Questions
1. choose from the options the most appropriate title for the poem
a. the grave yard
b. the lost love
c. the fair star
d. the mystery of death
2. which figure of speech is used in stanza two
a. personification
b. simile
c. similie
d. exclamation
3. Which feeling has the poet expressed in the last two lines?
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a. Love and the truth of life
b. Love and disappointment
c. Love and bereavement
d. Death and burial
4. The language of the poet could be best described as:
a. Simple and charming
b. Formal and poetic
c. Simple and colloquia
d. Scholarly and poetic

In questions 5 to 8, identify the use of sentence

5. She asked Tom what he had been doing since he returned from school.
a. Simple past perfect
b. Past continuous
c. Present perfect continuous
d. None of the above
6. In December, 2008 we shall have been living in Makurdi for exactly 15 years
a. Future continuous tense
b. Present continuous tense
c. Past tense
d. None of the above
7. I was going to llive on campus, but I have decided to stay off-campus
a. Past continuous tense
b. Simple future tense
c. Present perfect tense
d. None of these
8. We have just paid for the post UME screening exercise
a. Present perfect tense
b. Simple past tense
c. Past perfect tense
d. None of these

From question 9 to 12, choose the option which best completes the blank.

9. You are the boy who …… the bicycle
a. Has spoilt
b. Have spoilt
c. Has been reported to had spoilt
d. Has being reported to had spoilt
10. Two hours …… for the post UME screening exercise
a. Are enough
b. Were enough

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c. Is enough
d. Non of these
11. Each man and each woman …….. given a car
a. Has been
b. Have been
c. Has being
d. Have being
12. Neither the boy nor the girl ……
a. Was believed
b. Was beleived
c. Were beleived
d. Were believed

Check question 13 to 16 one option for each question is wrongly spelt. Spot the wrong option

13
a.
privilege

B.
irresitible

c.
isosceles

d.
renaissance
14
a.
reconnaissance

b.
reconnoite

c.
connoisseur

d.
pneumonia
15.
a.
manoeuvre

b.
liase

c.
miniature

d.
cyst
16.
a.
lexeme

b.
syntax

c.
morphology

d.
secretariate

In questions 17 to 20, choose the most appropriate alternative
17.
a.
he is a tall handsome dedicated man

b.
He is a handsome tall dedicated man

c.
he is a dedicated tall handsome man

d.
he is tall dedicated handsome man
18.
a.
he drove a blue nice old Japanese car

b.
he drove a nice old blue nice Japanese

c.
he drove an old blue nice Japanese car

d.

he drove a nice blue Japanese old car

19.

a.

she bought a small light-blue old beautiful French dress

b.

she bought a light-blue small beautiful old French dress

c.

she bought a beautiful small old light-blue French dress

d.

she bought a small light-blue old beautiful French dress.

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20.

a.

James built a big green glass duplex in Abuja

b.

James built a green glass big duplex in Abuja

c.

James built a glass green big duplex in Abuja

d.

James built a big glass green duplex in Abuja

In questions 21 to 23 choose the most appropriate alternative to complete the blank

21. It is very hot today …….

a. Is it?

b. Isn't it

c. Wasn't it

d. Is't it

22. You like her

a. Don't you

b. Isn't so

c. Won't you

d. Do you

23. Joseph hasn't passed the post UME screening exercise, …….

a. Has he?

b. Hasn't he?

c. Didn’t he
d. Had he?

For questions 24 to 25, choose the correct answer from the option provided

24. The senate president, Senator David Mark, has won his case at the appeal court. The underlined is

a. A noun phrase as object of the sentence
b. A non phrase in apposition
c. A noun clause in apposition
d. It makes clause as object of the sentence

25. A sentence is said to be in apposition if:

a. It disputes the central idea expressed
b. It contradicts its central idea
c. It makes reference to part of it
d. It makes a partial reference to the object of the sentence

ANSWERS TO ENGLISH 2008

1. D

14.
B
2. B

15.
B
3. C

16.
D
4. D

17.
C
5. A

18.
A

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6. B

19.
A
7. C

20.
A
8. A

21.
B
9. C

22.
A
10. C

23.
A
11. A

24.
B
12. A

25.

C

13. B

SATURDAY, OCTOBER 17TH 2009

001 ENGLISH LANGUAGE

Questions 1 to 3 is on speech writing

1. One of these is seldom used to enliven a speech

a. Repetition

b. Homour and anecdotes

c. Analogies and statistics

d. Suspense and slang expressions

2. All of these except one are required for effective speech writing

a. Audience analysis

b. Purpose clarification

c. Research

d. Status and personality of writer

3. “We eat food everyday”. The underlined words are examples of

a. Collocates

b. Verbal nouns

c. Determiners

d. Infinitives

In questions 4 to 5 choose the grammatically correct option

4. A) The students were not quite intelligent B) The student’s were not quiet intelligent C) The students were not intelligent D) The student’s were not intelligent

5. A) Physics is much easier than English B). Physics is very far easier than English C). Physics is very far too easier than English D). Physics is much easier to pass than English.

6. Which of these is not true of the caret?

a. To indicate omission of words in discourse

b. Used for editorial purposes

c. It is a punctuation symbol

d. It is a sport game

Questions 7 to 9 are ambiguous. For each, identify the type of ambiguity

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7. The spring is in the house

a. Structural

b. Lexical

c. Semantic

d. Morphological

8. All Tiv language teachers are to assemble at the square

a. Structural

b. Lexical

c. Semantic

d. Phonological
9. Boiling water can be harmful
a. Phonological
b. Semantic
c. Lexical
d. Structural
10. A short humorous poem of about five lines is an example of one of the following
a. Epigram
b. Satire
c. Limerick
d. Sonnet
11. Which of the following sounds is more closely associated with Turkeys?
a. Squeak
b. Hoot
c. Gobble
d. Warble
12. Which of these most appropriately describes the movement of Lark?
a. Flit
b. Strut
c. Waddle
d. Soar

Questions 13 to 15 are on letter writing. Choose the most appropriate option

13. Which of the following is not true of commercial correspondence?
a. The predominant tone is conversational
b. A reference number may be used
c. The opening line may not be indented
d. Full name and address of recipient come below sender's address.
14. All of these except one is true of reference number:
a. The reference number may state the issuing department
b. They assist in the effective filling of letters
c. They appear directly below sender's address
d. They indicate the subject referred to.

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15. Which of these is not an acceptable complimentary close on formal letters?
a. Yours faithfully
b. Yours sincerely
c. Yours truly
d. Faithfully yours

ANSWERS TO ENGLISH 2009

1. D

11.
D
2. D

12.
D
3. A

13.
-
4. C

14.
D
5. A

15.
D
6. –
7. A
8. –
9. B
10. C

SATURDAY AUGUST 14TH 2010
001 ENGLISH
Read the text bellow and answer the questions.

Ay, and bring back vanity and affection to last them the whole year. I wonder why London cannot keep its own fools at home. In my time, the follies of the town crept slowly among us, but now they travel faster than a stage goat. Its fopperies come down not only as

inside passengers, but in the very basket.

1. “flopperies” as used in the text means

a. Vanities

b. Glory

c. Property

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d. Peculiarity

2. “In the very basket” refers to:

a. Luggage compartment

b. Metro-line

c. Stage-coach

d. Box of tools

3. The text is a condemnation of:

e. Arrogance

f. Stupidity

g. Follies of the time

h. Pride

In questions 4 and 5 compare the option for each question and choose the letter of option that works best as a topic sentence

4. (a)

Nigerians imagine time as a highway stretching into the past

b.

Nigerians, generally, have quite a different concept of time from that of Europeans

c.

In Nigeria, people who can schedule time are looked on as impractical.

d.

in many parts of Nigeria, people find themselves annoyed when their appointments with people

occur on time

5. (a)

an important discipline that children encounter as they grow up is that of the superior force

b.

parents cannot avoid having to punish their children in order to teach them certain precautions

c.

having to yield to a superior force, however is never good for a child’s character, no matter how

necessary it might be

d.

superior force discipline can be seen whenever a sergeant says to a private, " you obey before

complain.

From questions 6-7, there are options A-D ffor each question. Choose the most grammatical option in the context in which it is used.

6.

(a) all the students congratulated each other for their success in the final examinations

(b) all the students congratulated each other for their success in the final examinations

(c) all the students congratulate each other for their success in the final examinations

(d) all the students were seeing congratulating each other for their success in the final examinations

7.

(a) James cannot speak Tiv language

(b) James cannot speak Tiv language

(c) James can not speak Tiv language

(d) James cannot speak the Tiv language

Fill in the gaps in the following sentences by choosing the most appropriate option from alternatives A-E

8.

what can you understand …….. what he has told you?

a.

to

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b.

form

c.

of

d.

by

e.

through

9.

on conviction, the accused waited for a while gazing ……. The trial judge

a.
up

b.
for

c.
in

d.
by

e.
at
10.
the final submission …… the state counsel rocked the whole court

a.
on

b.
by

c.
at

d.
through

e.
with

Choose from alternatives A-D the option that best completes the sentences in the questions below:

11. The old car is …….. for sale
a. On
b. Up
c. Off
d. by
12. it is only wise to live …….. one's income
a. upon
b. on
c. with
d. within
13. students shouted, "down ……. Oppression"

a. within
b. upon
c. with
d. by

In questions 18-21, choose the option in which the modal auxiliaries MUST, WOULD, COULD, WILL SHOULD are correctly used

14. (a) You must have to bring two black goats for the sacrifice
(b) You must have to bring two black goats for use for the sacrifice
(C) You must bring two black goats for sacrifice
(d) You must brought two black goats for the sacrifice

15.
(a) Our telephone lines would be restored tomorrow, the officer has promised

(b) Our telephones will be restored tomorrow. The office has promised

(c) Our telephone line will have to restored tomorrow. The officer has promised

(d) Our telephone lines would have to be restored tomorrow. The officer has promised

16.
(a)
He could not find his way to the market

(b)
He could not finds his way to the market

(c)
He could not find his way to the market

(d)
he could not finds his way to the market

In questions 17-18, fro the options provided, select the most appropriate preposition

17.
(a) He stopped on the middle of the road

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(b) He stopped by the middle of the road

(c) He stopped in the middle of the road

(d) He stopped at the middle of the road

18

(a) He works in the public library

(b) He work at the public library

(c) He works at the public library

(d) He work inside the public library

In questions 19-20, provide the most appropriate structural pattern of the sentence provided

19.

The politicians celebrated democracy.

a.

SVO

b.

ASVO

c.

SC

d.

SVOO

20.

students attend lectures everyday

a.

SVOA

b.

SVC

c.

SVA

d.

SVOO

ANSWERS TO ENGLISH 2010

1. B

11.

C

2. –

12.

D

3. D

13.

C

4. A

14.
C
5. A

15.
B
6. A

16.
A
7. A

17.
D
8. B

18.
C
9. E

19.
A
10. B

20.
A

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MATHEMATICS 2005

1.

Arrange the following numbers in ascending order of magnitude, 6/7, 13/16, 0.875

A. 0.875, 13/15, 6/7

B. 13/15, 0.875

C. 6/7, 13/15, 0.875

D. 6/7, 0.875, 13/15

E. None

2.

Find the product of (√ √ (√ √) √

A. 1

B. -1

C. 0

D. √

3.

A sum of money was invested at 8% per annum simple interest. If after 2 years the money amounts to N

300.00, find the amount originally invested.

a. 41.38

b. 20.69

c. 279.31

d. 280.96

e. 258.62

4.

Solve the equation below for x if all the numbers are in base 2

A. 101

B. 111

C. 10

D. 11

E. 1.1

5.

List all integers satisfying the inequality

A. -2, -1, 1 2, 3, 4

B. 2,3,4

C. 2,3,4,5

D. 2,5

E. -2,4

6.

If three numbers x,y,z are in the ratio 1:4:5 find the value of

A. 7.7

B. 18
C. 1.8
D. 77
E. None
7.
Without table evaluate log24 + log42-log255
A. 1
B. 0
C. ½
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D. 2
E. 4

8.
Find the value of h if a =3, b=1 and p =2 given that

A. 1/5
B. 1/7
C. 3/7
D. -1/5
E. -1/7
9.
If find the values of x
A. 1,3
B. -1,0
C. 0,1
D. -1,-3
E. 1,1
10.
find the values of p for which the equation has equal roots
A. 3,4
B. 4,5
C. 21,0
D. 1,2
E. 0,12
11.
Odeh gives one-third of his money to Tabo who had 105.00, he then finds that his money is reduced to one
fourth of what Tabo has. Find how much money Odeh had at first
A. 35.00

B. 60.00
C. 48.00
D. 45.00
E. 52.00
12.
Factorize
A.
B.
C.
D.
E. None.
13.
If the quadratic function is a perfect square, find C
A. 49/12
B. 49/36
C. 49/3
D. 49/24
14.
If ABC, AB = 13cm, BC = 9cm, AC = 11cm and ABC = find
A. 800
B. 75.650
C. 78.820

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D. 900
E. None

15.
The number of goals scored by a football team in 20 matches is shown below
Number of goals

0
1
2
3
4
4
Number of matches

3
5
7

4
1
0
What are the values of the mean and mode respectively?
A. 3.5,7
B. 3.5,2
C. 1.75,7
D. 2,7
16.
If two unbiased dice are tossed what is the probability of getting at most a six?
A. 1/36
B. 1/6
C. 5/18
D. 35/36
E. 2/3
17.
If the hypotenuse of a right angled isosceles triangle is 2, what are the lengths of the other two sides.
A. 1
B. √
C. 2
D. 2√

E. None
18.
The bearing of a bird on a tree from a hunter on the ground is N720E. What is the bearing of the hunter from
the bird.
A. S180W
B. S1080W
C. S720E
D. S180E
E. S720W
19.
Find the area of a regular hexagon inscribed in a circle of radius 8 cm
A. 32cm2
B. 48√
C. 8√
D. 96√
E. 16√
20.
Solve the simultaneous equations
A. 4,6
B. 2,3
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C. 3/8, 43/12
D. 4,6
E. -1,-6

ANSWERS TO MATHEMATICS 2005

1. C
2. ((√ √)(√ √)(√)
√ √ (E) ans.

3.⁄

(E)

4.

Converting from binary too denary
103two = 8ten
101two = 5ten
11two = 3ten

5.

6.
(3x+y)(4y-z)= [3(1) + 4)(4)-5)] = 7 X 11 = 77 (D) ans
7. D

8.

ans

9. A
10. E
11. D
12. Pqx2 + 8y -4qx-2pxy; = (px – 4)(qx – 2y)
13. 3x2 – 7x + C, if the quadratic function is a perfect square, then the descriminant must be equal to zero;
therefore, b2 – 4ac = 0; (-7)2-(4 X 3 X C) = 0; 49 -12C = 0; therefore, C == 49/12 (A) ans
14. AC2 = AB2 + BC2 – 2 X AB X BCcos

cos
ans (E)

15. Mean = 1.75, mode = 2, mode = 1.75,2 (D) ans
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16. Probability of getting a six = 15/36 = 5/12
17. By Pythagoras, hyp2=adj2+opp2; x2 + x2 = 22 since the length of other sides are equal √ √
18. The hunter's bearing from the bird is S180W (A) ans
19. D
20. D

MATHEMATICS 2006

1.

Arrange the following numbers in ascending order of magnitude 6/713/15, 0.865

A. 67<0.865<13/15

B. 6/7<13/15<0.865

C. 113/15<6/7<0.865

D. 13/15<0.865<6/7

2.

In the equation below, solve for x if all numbers are in base 2 11/x=1000/x+101

A. 101

B. 11

C. 110

D. 111

3.

Find the values of p which equation has equal roots

A. (0,12)

B. 1,2

C. 21,0

D. 4,5

4. Find the missing value in the table below

X

-4

-3

-2

-1

0

1

2

3

80

18

8

4

4

0

32

A. -32

B. -4

C. 40

D. 22

5.

Jude gave one-third of his money to Kate who had N105. He then finds that his money is reduced to one

fourth of what Kate has. Find how much money Jude had at first.

A. N45

B. N48

C. N52

D. N58

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E. N60

6.

Find n if log24 + log27-log2n =1

A. 10

B. 14

C. 27

D. 28

7.

If

find the value of

in terms of k

A. 3k2

B. 2k-k2

C. 17k2/4

D. K2

8.

Which of the formula below represents the general terms of which the following set of numbers (-1, 2/3, -

1/2, 2/5……) for n=1,2,3……?

A.

B.

C.

D.

9.

If k+1, 2k-1, 3k+1 are three consecutive terms of a geometric progression, find the possible values of the

common ratio

A. 0,8

B. 1,2

C. 2,2

D. 0,2

10.

Simplify cos2x(sec2x-sec2xtan2x)

A. Tanx

B. Tanxsecx

C. Sec2x

D. Cosec2x

11.

Find the total area of the surface of a solid cylinder whose base radius is 21cm and height is 52cm

A. 56 cm2

B. 72 cm2

C. 96 cm2

D. 192 cm2

12.

Find the probability that a number selected at random from 41 to 56 is a multiple of 9

A. 1/8

B. 2/155

C. 3/16

D. 7/8

13.

If √ find cosec x

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A.

√

B. √

C. √

D. √

14.
√

Rationalize √

√ √
A. 5 - √

B. 5 + √

C. 5√
D. √

15.
The mean of ten positive numbers is 16, another number is added to the mean becomes 18. Find the number
A. 3
B. 16
C. 18
D. 38
16.
The numbers 4, 16, 30, 20, 10, 14 and 26 are represented on a pie chart. Find the sum of the angles of the
sectors representing all numbers equal to or greater than 16
A. 180
B. 840
C. 920
D. 2760
17.
Below are scores for a group of students in a test
Scores
1
2

3
4
5
6
No of students 1
4
5
6
X
2
If the average score is 3.5, find the value of
A. 1
B. 2
C. 3
D. 4
18.

P
X

O

U
T
V
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S
Y
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In the above figure the area of the square PQRS 100cm2 if the ratio of the area of the square TUYS to the area of the square XQVU is 1:16, find YR
A. 6cm
B. 7cm
C. 8cm
D. 9cm

E. 10cm

19.

A currency used in a country is called “matimatic” (M) and is of base seven. A. lady in that country brought 4

bags of beans at M56 per bag and 3 bars of soap at M4 per bag. What is the total cost of items she bought

A. M247

B. M2477

C. M2367

D. M3417

20.

Solve for x if

A.

B.

C.

D.

21.

Divide the L.C.M of 48, 64 and 80 by their H.C.F

A. 20

B. 30

C. 48

D. 210

22.

Find the reciprocal of

A. 4/5

B. 5/4

C. 2/5
D. 6/7
23.
Evaluate without using tables
(0.008)-1/3+(0.16)-3/2
A.
635/8
B.
8/625

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C.
1/8
D.
8
24.
Y

X

Z
In the above XYZ =YTZ = 900, XT = 9cm and TZ = 16cm. find yz
A. 4.5
B. 4.5 X 10
C. 4.5 X 102
D. 4.5 X 103
25 Evaluate 2,700,000 X 0.03 18,000
A. 4.5
B. 4.5
C. 4.5 X 10
D. 4.5 X 102
E. 4.5 X 103

ANSWERS TO 2006 MATHEMATICS

8.
(1, 2/3,1/2, 2/5…..) FOR N = 1,2,3….., the general formula is (-1)n2/(n+1) (B)
9.
(A)

10.
Cos2x(sec2x + sec2xtan2x); [

] ; (C)

12.
41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56, probability of selecting a multiple of 9 = 2/16 =1/8 (A) ans

13.
(C)

14.
√ √ √ √ √ (B)
√ √
√ √

15. let the sum of the ten positive numbers be

(D)

16.
D

17.

19.
D
20.
C
21.
L.C.M of 48,64,80 = 26 X 3 X 5 =960; H.C.F 0f 48, 64,80 = 24 = 16 LCM/HCF = 960/16 =60

22.
B
24.
B

25.
2700000 X 0.03 18000
ans

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MATHEMATICS 2007

( )( )
1. Simplify

( )
A. 1

B.
/
/
C.
D. A
2. In a circle of radius 10cm a chord of length 10cm is Xcm from the center. How long is X?
A. √
B. √
C. √
D. 53

3. What is the value of x satisfying the equation
?

A. -2
B. -1/2
C. ½
D. 2
E. √

4. Calculate 33105 - 14425

A. 13135

B. 21315

C. 43025

D. 11035

5. The length of a note book 15cm was wrongly measured as 16.8cm. calculate the percentage error to 2

significant figures

A. 12.00%

B. 11.00%

C. 10.71%

D. 0.12%

6. Find the value of

A. 0.065

B. 0.650

C. 6.500

D. 65.000

7. Simplify √ √

√ √

A. 27

B. 1

C. 1/3

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D. 1/8

P

Q

R

In the Venn diagram above, the shaded region is

a.

b.

c.

d.

9
Make x the subject of the relation

e.

f.

g.

h.

10
If the function f is defined by find f(-1)
a. -10
b. -8
c. 4
d. 10
11.
if are three consecutive terms of a geometric progression find the possible values of the common ratio

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A. 0,8

B.

C. 2,3
D. 1,1
12.
The following marks were obtained by twenty students in an examination
53
30

70
84
59
43
90
20
78
48
44
60
81
73
50
37
67
68
64
52

Find the numbers of students who scored at least 50 marks
A.
6
B.
10
C.
13
D.
14
13

Weight (g)
0-10
10-20
20-30
30-40
40-50
No of coconuts 10
27
19
6
2

Estimate the mode of the frequency distribution above

A. 13.2g
B. 15.0g

C. 16.8g
D. 17.5g
14.
A number is selected at random between 20 and 30, both numbers inclusive. Find the possibility that the
number is prime.
A.
2/11
B.
5/11
C.
6/11
D.
8/11
15.
Find the radius of a sphere whose surface area is 154cm2
A.
7.00cm
B.
3.50cm
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C.
3.00cm
D.
1.75cm

16.
given that is an acute angle and sin find cos

a.
√

√
b.

c.

√

d.
√

17.
Add the same number of to the numerator and the denominator of if the resulting fraction is , then find

the number added.
a.
13
b.
14
c.
15
d.
12
18.
What will be the value of so that the quadratic equation has equal roots.
a.
2
b.
3
c.
4
d.
8
19.
If sin What is the value of in radians?

a.

b.

c.

d.

20. By selling an article for N 45.00 a man makes a profit of 8%. For how much should he have sold in order to make a profit of 32%.

a.
N 80.00
b.
N 59.00
c.
N 63.00
d.
N 55.00
21.
In one and a half hour, the minute hand of a clock rotates through an angle of
a.
900
b.
1800
c.
6400
d.
5400
22.
Given that and , find *x*
a.
-1.3010

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b.
-0.6990
c.
0.9690
d.
1.3010
23.
One side of a cuboid has diagonal of length 9cm and a square base of side 4cm. what is the height?
a.
9cm
b.
√
c.
√

d.
7cm
24.
The number 25 to base ten when converted to a binary base (base 2) is one of the following
a.
10011
b.
111011
c.
111000
d.
11001
25.
Which of the following lines is not parallel to line
A.

B.

C.

D.

ANSWERS TO 2007 MATHEMATICS
1.
A
2.
102 = X2 + 52, 100 = x2 + 25; √ √ √

3.
—

4.
A
5.
error = 16.8 – 1.5
6.
D
7.
C

9.

10.
f(x+2) = x2+7x-5, to find f(-1); x+2 =-1 x=-1-2 = -3

F(-3) = 2(-3)2 + 7(-3)-5; = 2(9)-21-5 = -8 (B) ans
11.
A
12.
Number of students with a tleast 50 marks = 14 (D) ans

13.
(
)

16.

(B) ans

17.
let the no be x

18.

19.

20.
no answer

21.
in one hour, the minute hand rotates 3600

1 hr = 360;

22.
10x = 0.2; log10x =log0.2

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Xlog10 = log

Xlog10 = log2 – log10

ans

24.
2510 = 110012

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MATHEMATICS 2008
1. The solution to the equation by factorization is

A.
B.
C.
D.
E. It is not factorization

2. Express 4Loga2-2Loga12+5Loga3 as a single logarithm

a. Loga324
b. Loga243
c. Loga144
d. Loga16
e. Loga81

3. If log72 = 0.3 and log75 = 0.7 evaluate log25

A. 2.50
B. 3/7
C. 0.44
D. 2.33
E. 0.21

4. Solve the equation 3x2 = 9x+4

A. 2 , 4
B. 2, -4
C. -4, -2
D. 4, -2
E. 4,4

5. Find the distance between the points A(7,8) and B(2,-4)

A. 14
B. 144
C. 12
D. 196
E. 13

6. If the straight line joining the points A(3,-5) to B(6,C) has the gradient 4, find the values of C

A. -5
B. 3
C. 6
D. 7
E. 12

7. Find the equation of the straight line that passes through the points p(1,2) and T (-1,4)

A. Y = 3x-1
B. Y = x-3
C. Y = 3-x

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D. Y = x+3

E. Y = 1-x

8. If a triangle has vertices at A(0,7), B(9,4) and C(1,0). Find the equation of the perpendicular from C to AB

A. Y = 3x – 3

B. Y = 3x + 3

C. Y = -3 – 3

D. Y = -3x + 3

E. Y = 1 – x

9. Express the following in the form of ax32 X 25/24 X 2-1

a. 25

b. 26

c. 24

d. 27

e. 29

10. The following are sequences except

a. 3,5,7,9,11,13….

b. 1,6,11,16,20,24…

c. 1,4,7,10,13,16…

d. 1,2,3,4,5,6,7…..

11. The 5th term of an AP is 44 and the sum of the first 8 terms of the AP is 100. Find the first term and the common difference.

a. a =2, d=3

b. a = 2, d = 4

c. a = 6, d =3

d. a = 3, d = 2

e. a = 4, d =2

12. the sum of n terms of a particular sequence is given by S

2

n =17n-3n . Find the expression for the 1/2nth term of the

sequence.

a. Tn =23n -20 -3n2

b. Tn = 20 +6n

c. Tn = 20 -6n

d. Tn = 6n – 20

e. Tn = 17n -3n2

13. The sum of n terms of the AP loge32, loge33…..

a. Sn = log3n

b. Sn =

c. Sn = 2n+1)log 3

e

d. Sn = (2n-1)log 3

e

e. Sn = (2n+1)log 3
e
14. Solve the equation⁄
a. X=3 or 1/3
b. X=-3 or 1/3

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c. X=3 or -1/3
d. X=-3 or -1/3
e. Imaginary roots
15. If and are the roots of the quadratic equation what is the value of
a. 8
b. 10
c. -10
d. -8
e. 5
16. What is the difference of in the expansion of ?
a. 32
b. 24
c. 8
d. 16
e. 1
17. What is the nature of the roots of the quadratic equation
a. The roots does not exist
b. The roots are real and exist
c. The roots are equal and exist
d. The roots are imaginary and does not exist
e. The roots are imaginary and exist.
18. If and are the roots of the quadratic equation what is the value of
a. 8
b. 10
c. -10
d. -8
e. 5
19. If log 2
3
5 =0.43 and log5 =0.63, find the value of log51.35
a. 1
b. 0.86
c. 2.04
d. 0.18
e. 3.90

20. Find the coordinates of the midpoint of the line joining the points P(3,-2) and Q(5,8)

a. (8,10)

b. (2,10)

c. (1,5)

d. (2,6)

e. (4,3)

21. Solve the equation

a. (-1/8, 2)

b. (1/8, 2)

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c. (-3,1)

d. (1,2)

22. If which term of the sequence is 900

a. 10

b. 22

c. 33

d. 19

e. 20

23. If x+2, x+3 and 2x2+1 are three consecutive terms of an AP, find the possible values of x

a. (-1, 3/2)

b. (-1,-2)

c. (1,3/2)

d. (1,3)

e. (-1,-3/2)

24. A letter is chosen at random from the alphabet. Find the probability that it is one of the letters of the world FREQUENCY.

a. 9/26

b. 7/26

c. 17/26

d. 5/13

e. 4/13

25. A bag contains 3 red balls, 4 blue balls, 5 white balls and 6 black balls. A ball is picked at random. What is the probability that it is either a blue or a white.

a. 4/5

b. 4/9

c. ½

d. 5/9

e. ¼

ANSWERS TO MATHEMATICS 2008

1. A

2. No answer

3. If log72 = 0.3 and log log75 = 0.7, evaluate log710; log710 = log75 + log72 = 0.7 + 0.3 =1

4. By factorization 3x2=32(x+4)

X2= 2x +8; (x+2) (x-4) =0; x + 2 = 0 or x – 4 = 0 (D) ans

5. E. ans

6. D

7. C

8.

9. C

10. C

11. A

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12. A

13. B

14.

using the general

formula x = 3 or 1/3 A. ans

15.

16. The coefficient of is 32

17. A the roots do not exist

18. Repeated question the same as question 15 ans is B

19. –

20. P(3,-2) and Q(5,8)

Mid point

:

22.

B

23.

3 red balls 4 blue balls 5 white balls and 6 black balls P(that it is either a blue or white ball) = ½ ans C

25.
FREQUENCY
the Pr(one of the letters of the word is 9/26 ans A.

MATHEMATICS 2009

1. Given the triangle ABC with a = 6.8cm, b = 7.2cm and c = 580

a. 6.8 cm
b. 7.2cm
c. 46cm
d. 51

2. If sin 300=1/2, sin450 and sin 450 evaluate Tan 150 without the use of tables

a.
√

√

b.
√

√

c.
√

√
d. √

√
3.

Given that sin
and cos
find the value of sin(

a.

b.

c.

d.

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4. If the straight lib=ne joining A(3,-5) to B(6,C) has the gradient 4, find the value of C
a. -5
b. 3
c. 6
d. 7
5. Given the equation of the straight line 3y = 5x+4, find the x and y intercept
A. X=5, y=3/4
B. X=-5, y = -4/3
C. X = 4/3, y = 5/4
D. X =-4/5 , y = 4/3
6. If A = (1,3,5,88,9) B = (2,4,6,8,10), and C = (4,9,16,25). Find the value of the set operation
a. { }
b. { }
c. { }
d. { }
7.

Factorize the equation

a. (x+3)(4x-1)
b. (x-3)(4x-1)
c. (x+3)(4x+1)
d. (x-3)(4x+1)
8. Obtain the remainder when the expression 3x2-3x+1 is divided by x-3
a. X+1

b. 3x+6
c. 19
d. 24
9. Expand (2+x)3 and use your expression to find (1.9)3
a. 6.859
b. 6.861
c. 5.661
d. 6.659
10. Obtain the remainder when the expression 4x3+3x2-2x+1 is divided by x2+2x-1
a. 4x+3
b. 4x-3
c. 8x+2
d. 8x-2
11. The 5th term of an AP is 18 and the sum of the first 8 terms of the AP is 30. Find the first term (a) and the common difference (d)
a. A=2, d=3
b. A=2, d=4
c. A=6, d=3
d. A=3, d=2

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12. If (x-3) and (x+1) are the factors of the polynomial f(x) = x3 + px2 + qx + 12 and p and q are constants, find p and q a. P =3, q =-1
b. P= -3, q=1
c. P=-6, q=5
d. P=6, q=-5
13. Express 4loga2=2loga12+5loga3 as a single logarithm
a. Loga324
b. Loga243
c. Loga144
d. Loga81
14. If log2 = 0.3 and log5 =0.7, evaluate log210
a. 2.50
b. 3/7
c. 2.3
d. 3.3
15. Solve the trigonometric expression (1+tan2
a. Sin2
b. 1
c. Sec2
d. cot2

ANSWERS TO MATHEMATICS 2009

1. C2 = a2 + b2 -2abcos; C2 = (6.8)2 + (7.2)2 – 2 X 7.2 X 6.8 cos 588
C2 = 98.04 – 51.89 = 46.15 √

4. A(3,-5) and B(B,C) same as 2008/2009 question 6

6. if A = {1,3,5,8,9} B = {2,4,6,8,10}, C = {4,9,16,25}

Find (AUB)nC AUB = {1,2,3,4,5,6,8,9,10}; C = {4,9,16,25}; (AUB)nC = (4,9) B. ans

7.
B

8. √ B. ans

10.
√ A. ans

11.
B.

14.
log210 if log2 = 0.3, log5 = 0.7; log25 + log102 = 0.7 + 0.3 = 1

15.
Ans = C because, tan2 + 1= sec2 and sec2 1/sin2

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MATHEMATICS 2010

1. factorize

a.

b.

c.

d.

2. If the hypotenuse of a right angled isosceles triangle is 4, what are the lengths of the other two sides?

a. 1

b. √

c. 2

d. 2 √

3. Given the arithmetic progression 49,44,39,……, find its nth term.

a. 49n

b. 44-4n
c. 54-5n
d. 5n-54n
4. Solve the equations simultaneously.
a. 3,2
b. -3,-2
c. 3,-2
d. -3,2
5. Divide the LCm of 64,80 and 96 by their HCF
a. 120
b. 80
c. 40
d. 20
6. Evaluate 270000X0.03
a. 4.5 X 103
b. 4,1,-11
c. 4,1,5
d. -4,-1,11
7. An operation * is defined on the set { } . Find (i) 0*4 (ii) 3*1 (iii) 4*5
a. 0,3,5
b. 4,1,-11
c. 4,1,5
d. 4,6

8. Given that { } { }

{ }
a. A { }
b. B { }
c. C { }

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d. D { }
9. Given that , find the possible values of cos
A. 0.25, 0.5
B. -0.25, 0.5
C. -0.25, -0.5
D. 0.25, -0.5

10. Find the values of h if a =4, b = 2, c = 2 and p = 3, given that

a. ¾
b. 1/3
c. ½
d. 1/5

11. Solve the equation below for x if all the numbers are in base 2.

a. 101
b. 11
c. 110
d. 111

12. The roots of the equations are 2/3 and -3. Find the values of k and l.

a. -7/3 , 2
b. 7/3 , -2
c. 2/3 , 2
d. -2/3 , -3

13. Find the missing values in the table below.

X
-3
-2
-1
0
1
2
3
-40

2
0
0
8

a. -12, 0
b. 12, 0
c. 0,0
d. 6,6

14. Solve the following equation for

a. X =5
b. X =2
c. X =-2
d. X =-5

15. Simplify

a. 2sin2x
b. 2cos2x
c. 2sec2x
d. 2cosec2x

16. Find the probability that a number selected at random from 34 to 54 is a multiple of 7.
a. 1/6
b. 1/7

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c. 1/8
d. 1/9

17. Below are scores for a group of students in a test.

Scores	1	2	3	4	5	6
No. of students	1	4	5	6	X	2

If the average score is 3.5 find the value of x.
a. 4
b. 3
c. 2
d. 1

18. There are 500 people living in Agwanta community. 166 of them speak Hausa language and 346 speak Tiv
language. If 82 of them speak neither, how many speak both?
a. 82

b. 94
c. 96
d. 102

19. Simplify ( )

a.

b.

c.

d.

20. If find the values of x
a. -5,-1
b. 5,1
c. -5,-1/5
d. 5,1/5

ANSWERS TO MATHEMATICS 2010

1. A

17.
C
2. B

18.
NO ANSWER
3. C

19.
A
4. B
5. –
6. C
7. B
8. D
9. –

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10. C
11. B
12. B
13. A
14. –
15. C
16. NO ANSWER

PHYSICS 2005

1.

The rate of change of momentum of a body is proportional to the applied force and takes place in the direction

of the force. That is

a. Archimedes second law of motion
b. Boyle's third law of motion
c. Newton's first law of motion
d. None of the above.

2. A bullet of mass 200g is fired horizontally into a stationary mass 5kg. The bullet and the block moved with a common velocity of 10m/s after the impact. The initial velocity of the bullet is:

a. 260m/s
b. 250m/s
c. 0.25m/s
d. 0.26m/s

3. The balance point of a meter-bridge may be defined as:

a. The point at the middle of the bridge
b. The point at which the galvanometer deflection is maximum
c. The point at which the galvanometer deflection is zero

d. The point where the jockey touches the wire

4. The critical angle of glass of refractive index 1.5 is

a. 4.20

b. 42.50

c. 41.80

d. 42.80

5. When an object is placed between the focal point and the pole of a converging mirow which of the following

is not true about the image formed.

a. Enlarged

b. Inverted

c. Virtual

d. Behind the mirow

6. Which of the following is not an optical instrument

a. Microphone

b. Microscope

c. Camera

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d. Binocular

7. A man shouted in an open field and hears the echo 3 seconds after. How far is the man from the reflecting

barrier if speed of sound in air is 330m/s

a. 990m

b. 110m

c. 450m

d. 495

8. Which of the following is not true about sound waves

a. It can't be reflected

b. It can be diffracted

c. It can be polarized

d. It cannot travel through vacuum

9. Overhead electric cables sag in the hot season because of

a. Electric expansion

b. Thermal expansion

c. Electrical conductivity

d. Thermal conductivity

10. Alcohol thermometers……

a. Alcohol is transparent

b. Alcohol wets glass

c. Alcohol vaporizes before 1000C

d. Alcohol is soluble in water at 1000C

11. The removal of electrons from a metallic surface by light radiation is known as

a. Ionization effect

b. Photoelectric effect

c. Surface effect

d. Excitation effect

12. Which of the following instruments is most suitable for measuring the diameter of a wire?

a. Meter rule

b. Micrometer screw gauge

c. Vernier caliper

d. Tape.

13. A body of mass 10kg falls freely from the top of a high tower and hits the ground in 3 seconds. With what

kinetic energy does it hit the ground?

a. 9000J

b. 4000J

c. 4500J

d. 5000J

14. What does the total area under the velocity-time graph represent?

a. Total acceleration covered by the body

b. Total velocity covered by the body

c. Total average speed of the body

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d. Total distance covered by the body

15. A galvanometer of resistance 2 and full-scale deflection of 50mA is to be used as an ammeter for

measuring a current of 1A. calculate the value of the protective shunt if the galvanometer is not to be

damaged.

a. 0.11

b. 0.95

c. 0.05

d. 2.5

16. Which of the following particles has the highest penetrating power in solids

a. Alpha particle

b. X-ray

c. Neutron

d. Gamma rays

17. One of the conditions for internal reflection to occur is that:

a. Light must travel from optically less dense medium to dense medium

b. Light must travel from optically dense medium to less dense medium

c. Light must travel in one homogeneous medium
d. The direction of light must change.
18. The image which cannot be formed on screen is said to be
a. Real
b. Virtual
c. Inverted
d. Erect.
19. The maximum energy required to remove an electron from an atom is known as
a. Photon energy
b. Ionization energy
c. Binding energy
d. Excitation energy
20. A radioactive element has a decay constant of 0.065s-1. Calculate its half life.
a. 0.13s
b. 9.50s
c. 10.666s
d. 12.33s

ANSWERS TO PHYSICS 2005

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

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8. D
9. D
10. A
11. D

17.
B
18.
B
19.
B

20 T = 0.692/ T= half life, decay constant; 0.065T = 0.693 ; T = 10.66s (C) ans

PHYSICS 2006

1. The area between the velocity – time graph is the

a. Total time taken
b. Acceleration
c. Change in velocity
d. Distance travelled
2. A body of mass 10kg has a density of 1.0 X 103kgm-3. Calculate volume
a. 1.0 X 104m3
b. 1.0 X 102m3
c. 1.0 X 10-2m3
d. 1.0 X 10-4m3
3. A block of mass 5kg is just made to start moving on a rough horizontal table by a horizontal force of 40N.
calculate the coefficient of static friction between the two surfaces (g=10m/s)
a. 8.0
b. 1.25
c. 0.8
d. 0.125
4. Which of the following statements is/are correct
I
the potential energy of a body is the energy it posses by virtue of its motion
II
the kinetic energy of a body is always equal to its potential energy
III
the sum of the potential energy and the kinetic energy of a body falling freely under gravity is
constant
a. I only
b. II only
c. I and II only
d. II and III only
5. An orange at rest falls freely from a height of 10m to ground. Calculate the time taken to reach the ground. (g
= 10m/s)
a. 1s
b. 1.4s
c. 2s
d. 2.8 s
6. Which of the following has the same unit as the moment of a force?
a. Force

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b. Power
c. Impulse

d. Work

7. In which of the following devices may a thermostat not be used.

I.

Electric refrigerator

II.

Electric kettle

III.

Electric iron

a. I only

b. II only

c. III only

d. I, II III

8. Which of the following is the correct definition of heat capacity of a substance?

a. The heat energy required to raise the temperature of a unit mass of a substance by one degree

b. The heat energy required to raise the temperature of a substance by one degree

c. The heat energy lost per unit mass of a substance

d. The heat energy gained per unit mass of a substance

9. A PHCN wire has a length of 30.00m and is made of metal linear expansivity, 2.0 X 105 per 0C. find the change in length from a hot day, temperature 300C, to a very cold day, -50C

a. 2.1m

b. 3.0m

c. 0.21m

d. 0.021m

10. The vacuum in a thermoflask prevents heat looses by

a. Radiation and evaporation

b. Conduction and convention

c. Convention and radiation

d. Conduction, convention and radiation

11. A gas which obeys Charles's law exactly has a volume of 283cm3 at 100C. Calculate its volume at 300C.

a. 849cm3

b. 566cm3

c. 303cm3

d. 293cm3

12. Images formed by a convex mirror are always

a. Erect, real and magnified

b. Erect, virtual and diminished

c. Inverted, real and magnified

d. Inverted, virtual and diminished

13. An object is placed 20cm from a converging lens of length 15cm. find the position of the image from the lens a. 30cm

b. 40cm

c. 50cm

d. 60cm

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14. Which of the following is not correct

a. A compound microscope has two converging lenses of long focal lengths

b. A telescope is used in viewing distant objects

c. A microscope is used in viewing small objects.

15. If the refractive index of glass is √ , calculate the angle of incidence of a ray of light travelling from air to glass when the angle of refraction is 300 [sin 300=1/2, sin 45 = √/, sin 60=√/sin 90 =1]

a. 00

b. 300

c. 450

d. 600

16. A gun is fired 495m from the foot of a tall cliff. How long after firing does it take to hear the echo, if the velocity of sound in air is 330m/s

a. 0.7s

b. 1.5s

c. 3.0s

d. 6.0s

17. Which of the following has the longest wavelength?

a. Infra-red rays

b. X-rays

c. Ultra-violet rays

d. Radio waves

18. The unit of inductance is

a. Farad

b. Henry

c. Hertz

d. Weber

19. A household refrigerator consumes electrical energy at the rate of 220W. if electricity cost N5 per KWH in

Nigeria, calculate the cost of operating the appliance for 30 days

a. N720

b. N620

c. N300

d. N220

20. In series R-C circuit, the resistance of the resistor is 4 ohms and the capacitive reactance is 3 ohms. Calculate the impedance of the circuit.

a. 4 ohms

b. 5 ohms

c. 7 ohms

d. 12 ohms

21. A point charge of 1.0 X 10-7 experiences a force of 0.001N in a uniform electric field

calculate the magnitude of the strength of the field.

a. 106V/m

b. 10-5V/m

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c. 10-6V/m

d. 105V/m

22. Alpha rays are also known as

A. Electrons

B. Neutrons

C. Electromagnetic waves

D. Helium nuclei

23. An electron of charge 1.6 X 10-19C is accelerated in a vacuum from rest at zero volt towards a plate at 40KV.

Calculate the kinetic energy of the electron

a. 3.2 X 10-15

b. 4.4 X 10-15

c. 6.4 X 10-15

d. 8.4 x 10-15

24. Determine the current flowing in a filament of a lamp rated at 240V, 60W

a. 0.25A

b. 25A

c. 0.4A

d. 4A

25. How many alpha particles are emitted in a radioactive decay of

To

a. 2

b. 3

c. 4

d. 5

ANSWERS OF 2006 PHYSICS

1. B

2. D = M/V = 1.0 X 103 = 10/V; V = 10/1 X 103 = 1 X 10-2 (C)

3. U = F/R; 50/40 = 1.25 (B)

4. D

5. –
6. E
7. A thermostat is not used in refrigerator
8. B
9. –
10. B
11. A
12. B

PHYSICS 2007

1. A resultant force of 20N acts on a body of mass 5kg for 5 seconds. Which is the impulse of the body?

a. 25Ns

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b. 30Ns
c. 100Ns
d. 250Ns

2. Which of the following is not a vector quantity?

a. Momentum
b. Displacement
c. Velocity
d. Temperature

3. The area between the velocity-time graph is the

a. Distance travelled
b. Acceleration
c. Change in velocity
d. Total time taken

4. A body of mass 10kg has a density of 1.0 X 103kgm-3. Calculate its volume

a. 1.0 X 104m3
b. 1.0 X 102m3
c. 1.0 X 10-2m3
d. 1.0 X 10-4m3

5. Which of the following statement is/are not correct?

I.
The potential energy of a body is the energy it posses by virtue of its motion
II.
The kinetic of a body is always equal to its potential energy
III.
The sum of the potential energy and the kinetic energy of a body falling freely under gravity is
constant.

a. I only

b. I and II only
c. II only
d. II and III only
6. An range at rest falls freely from a height of 10m to the ground. Calculate the time taken to reach the ground (g = 10m/s2).
a. 1.4 secs
b. 1.3 secs
c. 1.0 secs
d. 2.4 secs
7. Which of the following is the correct definition of the heat capacity of a substance?
a. The heat energy by one degree
b. The heat required to raise the temperature of a substance by one degree
c. The energy lost per unit mass of a substance
d. The heat energy gained per unit mass of a substance
8. A PHCN wire has a length of 30.0m, and it is made of linear expansivity, 2.0 X 10-5 per 0. C. find the change from a hot day temperature 300C, to very cold day, -50C
a. 2.1m
b. 3.0m
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c. 0.21m
d. 0.021m
9. The vacuum in thermos flasks prevents the heat loss by
a. Radiation and evaporation
b. Conduction and convention
c. Convention and radiation
d. Conduction, convention and radiation
10. A gas which obeys Charles' law exactly has a volume of 283cm3 at 100C. calculate its volume at 3000C.
a. 849cm3
b. 566cm3
c. 303cm3
d. 948cm3
11. Images formed by convex mirror are always
a. Erect, real and magnified
b. Erect, virtual and diminished
c. Inverted, real and magnified
d. Inverted, virtual and diminished
12. An object is placed 20cm from a converging lens of focal lens of focal length 15 cm. find the position of the image from the lens.
a. 30cm
b. 40cm

c. 50cm
d. 60cm
13. Which of the following is not correct?
a. A compound microscope has two converging lenses of long focal lengths
b. A telescope is used in viewing distant objects
c. A microscope is used in viewing small objects
d. The objective lens of a telescope has a longer focal length than its eye piece.
14. If the refractive index of a glass is √ . Calculate the angle of incidence of a ray of light traveling from air to glass when the angle of refraction is 300C [sin 300C = ⁄, sin 450C = √ , sin 900C =1]

a. 00C
b. 300C
c. 450C
d. 600C
15. The unit of inductance is
a. Farad
b. Henry
c. Hertz
d. Weber

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ANSWERS TO PHYSICS 2007

1. Impulse = FT where F = 20; T = 5 secs = 20N X 5 secs = 100N (C)
2. D
3. A. the area under the velocity time graph is distance travelled
4. Density = mass/volume; volume = 1.0 X 103 kg/m3 = 10/1 X 103kg-3 ; = 1.0 X 10-2 (C) ans
5. A
6. A
7. B
8. –
9. B

10.
from Charles

A. ans

11. B
12. 1/f = 1/u + 1/v
1/15 = 1/20 + 1/u = (u + 20)/2
20u = 15u + 300 ; U = 60 D. ans
13. –
14. ang = sin/sinr = √

√
sini =√ C ans

15. unit of inductance is the Henry B.
16. P = IV; 6000/1000 X 8 hours; 1N = KwH; 1N = 48kWH
6.50 = x; xN = 6.50 X 48 = 312 (B)
17. A
18. B
19-
20. D
21. B
22. C
24. (no answer)
25. D

PHYSICS 2008

1. A sample of radioactive material has a half-life of 25 hours, what is the proportion of the original radioactive nuclei will remain after 125 hours?

a. 1/32
b. 1/16

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c. 1/10
d. ¼

e. ½

2. Which of the following radiations if deflected most when passed through a magnetic field?

a. rays
b. rays
c. rays
d. Light rays

3. Calculate the time to deposit 3.3g of copper current of copper using current of 0.5A in a copper plating process. (electrochemical equivalent of copper = 0.00033gC-1).

a. 0.00005s
b. 0.00235s
c. 0.00545s
d. 20,000s
e. 40,000s

4. An equipotential surface is

I.
A surface in which all points are at same potential
II.
A surface in which the potential is equal at the edges
III.
A surface in which no work is done in moving a charge from one point to another
IV.
The potential between any two points on such a surface is zero

a. I only
b. II, III and IV only
c. II and IV only
d. I and IV only
e. I and III only

5. A particle having a charge of 2.0 X 10-9C is acted upon by a downward electric force of 3.0X10-6N in a uniform electric field. What is the strength of the electric field.

a. 1.5 X 103N/C
b. 15 X 103N/C
c. 15 X 102N/C
d. 1.5 X 103N/C
e. 150NC

6. A particle X is at a potential of 200V and another point Y is at potential of 120V. find the worrkdone in mving a charge of 10q from x to y.

a. 800J
b. 920J
c. 180J
d. -800J
e. -8J

7. A generator can be adapted to produce direct current using a:

a. Pair of slip-ring
b. Commulator

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c. Make-and-brake device
d. Condenser
e. Pair of brushes

8. The following are factors which increase current sensitivity in a moving coil instrument except;
a. Weak and spring/suspension
b. Strong magnet
c. Long pointer
d. Large-casing
e. Soft iron core.

9. A cell of e.m.f 3V and internal resistance 1.500 is connected in series with an ammeter of internal resistance 0.50 and 8.00 resistor. What is the current passing through the ammeter
a. 0.3A
b. 3A
c. 0.27A
d. 3.33A
e. 1A

10. Local action in a simple cell is caused by the use of:
a. Impure commercial zinc plate
b. An impure copper plate
c. Dilute acid used as electrolyte
d. Concentrated acid used as electrolyte
e. An alkaline solution used as electrolyte.

11. A simple microscope forms an image twice the size of the object. If the focal length of the lens of the
microscope is 10cm, how far is the object from the lens?
a. 2cm
b. 10cm
c. 15cm
d. 5cm

12. Two mirrors are inclined at an angle of 360. What number of images can be formed
a. 10
b. 8
c. 9
d. 1
e. No image is formed

13. Total internal reflection will not occur when light travels from;
a. Water to air
b. Glass to air
c. Glass into water

d. Water into glass

e. Air into vacuum

14. If the same note is sounded on different musical instruments, the instrument may be identified by the

difference in

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a. Loudness

b. Intensity

c. Frequency

d. Quality

e. Seed.

15. Find the ratio of the intensities of two sounds if one is 8 decibels louder than the other

a. 6.3

b. 0.8

c. 10

d. 8

e. 0.11

16. Which of the following kinds of waves cannot travel through a vacuum?

a. Radio waves

b. Infrared waves

c. Light waves

d. Ultra violet waves

e. Sound waves

17. Two sounds of frequencies F1 = 35Hz and F2 = 50Hz produce beats. What is the beat frequency?

a. 85Hz

b. 500Hz

c. 350Hz

d. 1Hz

e. 15Hz

18. One is able to perceive the odour of food from a distance because

a. The molecules of food travel by exosmosis

b. The molecules of air are in constant motion

c. The ingredient used travel by capillarity

d. Osmosis is operative

19. The pressure of the vapour on top of an enclosed liquid is found to be equal to the atmospheric pressure.

Therefore, the enclosed liquid is at a temperature equal to its

a. Freezing point

b. Sublimation point

c. Due point

d. Condensation point

e. Boiling point

20. An object weights 2.0N in air and 1.5N when completely immersed in a liquid of density 800kgm-3, what is the

up thrust of the liquid on the solid (take g = 10ms-2)

a. 0.5N

b. 3.5N

c. 0.75N

d. -0.75N

e. 20N

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21. Who stated the law that the direction of induced current is always such as to oppose the change producing

it?

a. Faraday

b. Lenz

c. Dalton

d. Maxwell

e. Ampere's

22. A frog can jump through its maximum range of 90cm if

a. It is of light/small weight

b. It jumps through an angle of 900

c. It jumps through an angle of 450

d. It jumps through an angle of 300

e. It can fly

23. A vector of magnitudes 10 units going due was combined with another vector to give a zero resultant. What

is the vector??

a. 10 unit due east

b. 10 unit due east

c. Unit due north

d. -10cm

e. 10cm

24. Two forces PQ, acts a point. If their resultant is given by P – Q in the direction of P, then

a. The angle between P and Q is 1800

b. Q is greater than P

c. The angle between P and Q is 00

d. None of the above is correct

25. The linear expansivity of an object at 100C is 1.0 X 10-5K-1. What is the object are expansivity?

a. 5 X 10-5K-1
b. 1.0 X 10-5K-1
c. 3.0 X 10-5K-1
d. 2.0 X 10-5K-1
e. None of the above is correct.

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ANSWERS TO PHYSICS 2008

1. T1/2
; 25
; 25
ans

2. A
3.

4. E
5. A
6. A
7. A
8. D

9.

10. B
11. Using the line formula; 1/f = 1/u +1/v ; 1/10 = 1/2u + 1/v; 1/10 = 3/2v; 30 = 3v, v = 30/3 = 10 B ans

12. No of images formed by plane mirror is N = (360/ since
C ans

13. B
14. D
15. D
16. E
17. F1 = 35Hz, F2 = 50Hz; Beat frequency = F1 + F2 = 35 + 50 = 85Hz ans C.
18. B
19. E
20. B

22.
E
21. D

23.
A

24.
D

Physics 2009

1. Which of the following eclipse occurs when the earth is between the sun and the moon?
a. Solar eclipse
b. Lunar eclipse
c. Star eclipse
d. Moon eclipse
e. Eclipse of the earth
2. When an object is placed between two plan mirrors, the images formed are
a. 2
b. 20

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c. Infinite
d. No image is formed
e. 1
3. Transformer loses includes the following except
a. Capacitance loss
b. Copper loss
c. Hysteresis loss
d. Eddy-current loss
e. Magnetic leakage
4. An A.C. circuit of e.m.f 120V has a resistance 8 connected in series to an inductive resistance 10 and the capacitive reactance of the capacitor is 16 . What is the current in the circuit?
a. 2A
b. 1A
c. 3.5A
d. 14A
e. 12A
5. A radioactive isotope has a decay constantof 10-8S-1. What is its average life?
a. 108s
b. 6.93 X 107s
c. 10s
d. 7 X 108s
e. 200s
6. The dimension of surface tension is given by
a. M3L-1T-2
b. ML-1T-2
c. MT-2
d. M3LT-2
e. L2T-2
7. An object of volume 50cm3 is immersed in water of density 103kgm3. What is the upthrust?
a. 2.88 X 10-2N
b. 5.84 X 10-2N
c. 10.5N
d. 0.006N
e. 5.8 X 10-2N
8. A car of mass 500kg moves round in a circle of radius 20m with a velocity of 10m/s. find the coefficient of
fiction between the tyre and the ground (Given that g = `10/s2)
a. 50 X 10-2N
b. 312.5N

c. 5 X 10-3N
d. 0.5
e. 5 X 10-3
9. The following are factors affecting viscosity except

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a. Presence of impurities
b. Nature of the liquid
c. Relative velocity
d. Concentration
e. None of the above
10. A particle of mass 10kg moves in a circular orbit of radius 2cm with a linear velocity of 0.6m/s2. What is its centripetal force?
a. 180N
b. 1800N
c. 18N
d. 4.8N
e. None of the above
11. An engine of a car of power 40Kw moves o a rough road with a velocity of 50ms-1. What is the force that is
required to bring to rest?
a. 400N
b. 800N
c. 0.8N
d. 1.25N
e. 2000N
12. Calculate the number of moles of an ideal gas of volume 8.3m3 at a pressure of 3 X 103Nm-2 and
temperature of 270C. (R = 8.3 mol-1K-1)
a. 15
b. 10
c. 100
d. 20
e. 500
13. The following are the characteristics of a wave except
a. Refraction
b. Dispersion
c. Beat
d. All of the above option
e. Options a and b only
14. Given a progressive wave equation y = 0.8 sin (100 . what is the velocity of te wave
a. 12.6m/s

b. 720m/s
c. 630m/s
d. 500m/s
e. 340m/s

ANSWERS TO PHYSICS 2009

1. A
2. E

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3. B
4. E
5. B
6. A

7.
mass= density X volume E

8. Force = mdsin 0.4m; 7.2 X 10-1 X 0.4; 0.288 = 2.88 X 10-2 N ans A
9. Mass = 500kg, V = 10m/s, g = 10m/s2; since f = mg = 500 X 10 = 5,000N

The coefficient of static friction

10. D

11. Centripital force
and since M= 10kg, r= 2cm = 0.2m, v = 0.6m/s2

C ans

12. P = 40 KW 40,000W ; V = 50 m/s; Force = 40 X 50 2000 N ans (E)
13. –
14. E
15. C

PHYSICS 2010

1. A copper wire 3m long and 2mm2 in cross-sectional area hangs from the ceiling. What will be its elongation if a 2kg masss is suspended from the lower end? (Young's modulus of

copper = 12.5 X 1011kg/cm3).

a. 0.0235cm

b. 1.0234cm

c. 0.0002cm

d. O.1111cm

2. A bullet of mass 0.5kg moving at a speed of 200m/s is fired at the wall. If the bullet penetrates the wall to as far as 0.2mm. find its acceleration.

a. 10m/s2

b. 11m/s2

c. 12m/s2

d. 13m/s2

3. Suppose that two objects attract each other with a force of 16 units. If the mass of both objects was tripled, and if the distance between the objects was doubled, then what would be the new force of attraction

between the two objects?

a. 36 units

b. 33 units

c. 20 units

d. 22 units

4. What would happen to your weight if the mass of the earth somehow increased by 10%?

a. Decrease

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b. Increase

c. Remain the same

d. Increase with earth height.

5. What is the force between the two point charges? (q1 = +12 X 10-9C, q2 = -18X10-9C). if they are connected

together by a conducting wire ad separated by a distance a distance 0.3m.

a. 8.99 X 10-7N

b. 8.98 X 10-7N

c. 7.99 X 10-7N

d. 8.29 X 10-6N

6. A body starts with an initial velocity of 26m/s and moves with a constant acceleration of 7m/s2, for 25s. find the total distance moved in meters.

a. 9400mm

b. 8400mm

c. 8500cm

d. 8800cm.

7. A particle is displaced through a distance with a force what is the work done?

a. 5J

b. 4J
c. 2J
d. 8J
8. What is the acceleration of an object of mass 20g with a force of 2N.
a. 100m/s2
b. 10 m/s2
c. 200 m/s2
d. 101 m/s2

9. What is the dimension of (a) in the equation (
) if P is pressure of the gas, V its volume, T

absolute temperature and R is the molar gas constant.
a. ML5T-2
b. MLT-2
c. LT-2
d. MT-2
10. 125cm2 of gas are collected at 150C and 755mm of mercury pressure. Calculate the volume of the gas at s.t.p.
a. 118cm2
b. 111 cm2
c. 110 cm2
d. 108 cm2
11. A battery has an e.m.f of 45 volts and an internal resistance of 1.0ohms. what is the voltage drop across a 24
ohm resistor.
a. 43.2V
b. 42.5V
c. 20.2V
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d. 21.2V
12. A count-rate meter is used to measure the activity of a given sample. At one instant the meter shows 4750
counts per minute. Five minutes later it showsc2700 counts. Find the half life of the sample.
a. 6.10 minutes
b. 7.00 minutes
c. 6.20 minutes
d. 7.10 minutes
13. The electron beam in a television receiver tube is accelerated by 12000 volts. What is the De Broglie's

wavelength of the electrons? (h= 6.6 X 10-34J.).

a. 0.112A

b. 0.111A

c. 1.100A

d. 2.100A

14. Calculate the energy in joules of a visible light photon of wavelength 7500A.

a. 2.65 X 10-19J

b. 1.61 X 10-19J

c. 2.70 X 10-19J

d. 2.64 X 10-19J

15. A concave mirror has a focal length off 12 cm. where should an object be placed to form a virtual image twice as far from the mirror.

a. 6.0m

b. 5.0m

c. 5.5m

d. 6.1m

16. An object 3cm high is located in front of a concave mirror of radius of curvature -12cm. find the position and size of the image.

a. -3.75cm, 0.75cm

b. -1.75cm,0.75cm

c. -2.70cm,2.15cm

d. 2.75cm, 0.76cm

17. The temperature of 500g off a certain metal is raised to 1000C and it is then place in 200g of water at 150C. if the final steady temperature rises to 210C, calculate the specific heat capacity of the metal.

a. 128J/kgK

b. 127J/kgK

c. 118J/kgK

d. 228J/kgk

18. Heat loss by radiation in a vacuum flask can be minimized by;

a. Silver coating in the inner tube

b. Creating a vacuum between the inner tubes

c. Inserting a cork on it

d. Keeping the flask in a cool place

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19. A metal rod has a length of 100cm at 2000C at what temperature will its length be 99.4cm if the linear

expansivity of the material is 2 X 10-5K-1.

a. -1020C

b. 1010C

c. -1120C

d. -1010C.

20. A lump of gold silver alloy has a mass of 350.8g and a volume of 20cm. assuming that no change in volume

occurs when gold is alloyed with silver, find the mass of silver in the sample. (density of gold = 19.3g/cm3,

mass of silver =10.5g/cm3)

a. 42g

b. 32g

c. 33g

d. 31g

BIOLOGY 2005

1. Transpiration takes place through the following structures.

a. Guard cells

b. Epidermal cells

c. Stomata

d. Phloem

2. Scales are found in the following with the exception of

a. Amphibians

b. Birds

c. Fishes

d. Reptiles

3. The air sacs in birds play the same role that…… play in fishes

a. Fins

b. Swim bladders

c. Lateral lines

d. Scales

4. The muscular diaphragm is characteristic of

a. Amphibians

b. Mammals

c. Reptiles

d. None of the above

5. The organisms listed below belong to the phylum …… crabs, grasshopper, tick, tsetse fly

a. Nematode

b. Arthropoda

c. Mollusce

d. Platyhelminthes

6. *Fascciola gigantic* belongs to the phylum

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a. Nematode
b. Arthropoda
c. Molluse
d. Platyhelminthes
7. The movement of molecules against a concentration gradient is known as
a. Osmosis
b. Plasmolysis
c. Diffusion
d. None of the above
8. Which of the following is the correct order in the life cycle of the flat worm
a. Egg – miracidium – radiae – sporocyst
b. Egg – miracidium – sporocyst – radiae
c. Egg – sporocyst – miracidium – radiae
d. Egg – radiae – metacercariae
9. Translocation takes place through
a. Xylem
b. Phloem
c. Epidermis
d. Cambium
10. Which of the following class in the phylum cnidaria exhibits polymorphism
a. Anthozoa
b. Hydrozoa
c. Scyphozoa
d. None of the above
11. Gastiozoids and gomozoids are structures of which of these organism
a. Coalentrates
b. Protozoans
c. Nematodes
d. Arthropods
12. The following organisms can reproduce through conjugation with the exception of
a. Spirogyra
b. Rhizopus
c. Volvox
d. Mucor
13. The thick walled structure formed after the union of the male and female gametes in lower plants is known as
a. Zygote
b. Zygospore
c. Offspring
d. Progeny
14. A distinct part of the cell with a particular structure and function is known as
a. Cytoplasm

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b. Organelle
c. Organs
d. Organism
15. Rod shaped bacteria arranged in chain are
a. Bacilli
b. Staphylobacilli
c. Streptobacilli
d. Diplobacilli
16. The study of fishes is known as
a. Fish culture
b. Fishology
c. Ichthyology
d. Helminthology
17. The nucleus is made up of
a. DNA and RNA
b. RNA and proteins
c. DNA and proteins
d. DNA, RNA and proteins
18. Internally generated pressure that helps a plant cell maintain it's shape is provided by
a. Osmotic pressure
b. Hydrostatic pressure
c. Cell wall
d. Cell vacuole
19. ……. Is not a product of excretion
a. Sweat
b. Urine
c. Excreta
d. Carbon dioxide
20. The function of the cell wall includes providing the following except
a. Mechanical strength
b. Turgidly
c. Translocation
d. Skeletal support

ANSWERS TO BIOLOGY 2005

1. C

11.
A

2. A

12.
D
3. B

13.
B
4. B

14.
B
5. B

15.
-
6. D

16.
C
7. A

17.
A

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8. D

18.
-
9. –

19.
C
10. A

20.

BIOLOGY 2006

1. An association between the root nodule of a leguminous plant and Rhizobium spp is called

a. Parasitism
b. Symbiosis
c. Anatogonism
d. Commensalism

2. Specimen X which turns blue-black when mixed with iodine is

a. Glucose
b. Fructose
c. Starch
d. Cellulose

3. When yeast respires anaerobically, it converts simple sugar to carbon IV oxide and

a. Water

b. Oxygen
c. Acid
d. Alcohol
4. The physical and climatic factors f a region primarily determine the
a. Nature of the soil in that region
b. Types of plants found in the area
c. Community of organisms in the region
d. Kinds of animals inhabiting the area
5. The most common means of transmitting acquired immune deficiency syndrome (AIDS) is
a. Through blood transfusion
b. Sexual intercourse
c. From mother to child
d. Through sharing of needles
6. Birds which are large with long straight pointed beaks, long necks and long legs are likely to be
a. Fish catchers
b. Insects eaters
c. Fruits eaters
d. Nectar feeders
7. A person that is obese must avoid meals containing
a. Carrots and oranges
b. Rice and yams
c. Butter and margarine
d. Beef and beans

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8. Tissue respiration is important for
a. Absorption of digested food particles
b. Exhalation of carbon IV oxide from the lungs
c. Inhalation of carbon IV oxide in the lungs
d. Release of energy for body use
9. In which part of the human body does the secretion of growth regulator occur.
a. Head region
b. Waist region
c. Neck region
d. Gonads
10. Short sightedness can be corrected by lenses which are
a. Convex of a toad
b. Concave
c. Plano-convex
11. The organ which secretes digestive enzymes as well as hormones is

a. Spleen
b. Liver
c. Pancreas
d. Salivary gland
12. Which of the following is not an arthropod
a. Millipede
b. Spider
c. Crab
d. Snail
13. At what stage in the life history of the toad is its mode of breathing similar to that of a fish
a. Tadpole stage
b. External gill stage
c. Adult stage
d. Larval stage
14. A person who can receive blood from all donors, belongs to the blood group
a. O
b. A
c. AB
d. B
15. Deficiency of calcium in the diet may cause
a. Sterility
b. Beriberi
c. Retarded growth
d. Anemia
16. Which of the following is not caused by bacteria
a. Typhoid
b. Tuberculosis

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c. Tetanus
d. Polio
17. In the life history of butterfly destruction of crops is caused by the
a. Maggot
b. Caterpillar
c. Pupa
d. Adult
18. Which of the following list of organs is directly involved in nutrition?
a. Oesophaggus, branchus, stomach and anus
b. Spleen duodenu jejunum and rectum
c. Teeth, oesophagus, lungs and Iluem
d. Liver, stomach, villi and colon

19. The hypha of Rhizopus is coenocytic because it
a. Does not contain chlorophyll
b. Is vacuolated
c. Stores oil globules
d. Has no cross walls
20. Which of the following features of Euplena is found only in animals
a. Flapellum
b. Pollicle
c. Pyrenoid
d. Granules
21. A distinguishing feature of mammals is the possession of
a. Hair
b. Skin
c. Scale
d. Nail.
22. In water culture experiment, a plant showed poor growth and yellowing of leaves. These may be due to
deficiency of
a. Copper
b. Iron
c. Magnesium
d. Calcium
23. The dark (light independent stage) reaction of photosynthesis involves
a. Fixation of carbon IV oxide to give a six carbon sugar
b. Fixation of carbon IV oxide with the help of oxygen
c. The use of carbon IV oxide to produce glucose
d. Fixation of carbon IV oxide on chlorophyll using hydrogen
24. Which of the following organisms does not exist as a single free living cell
a. Paramecium
b. Amoeba
c. Volvox

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d. Chlamydomonas
25. The ability of a baby being a boy or a girl depends on the contribution of the
a. Father's sex cells
b. Father's chromosome
c. Mother's sex cells
d. Mother's chromosome

ANSWERS TO BIOLOGY 2006
1. B, SYMBIOSIS

14.
A
2. C, STARCH

15.
D
3. A, WATER

16.
D
4. C

17.
A
5. B

18.
D
6. C

19.
C
7. B

20.
B
8. D

21.
A
9. C

22.
C
10. B

23.
C
11. C

24.
C
12. D

25.
B
13. A

BIOLOGY 2007

1. The organ which secrets digestive enzyme as well as hormones is
a. Salivary gland
b. Spleen
c. Pancreas
d. Liver
2. At what stage in the life history of a toad is its made of breathing similar to that of a fish
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b. Tadpole stage
c. Larval stage
d. External gill stage

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3. Which of the following features of euglena is found only in animals
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b. Pellicle
c. Pyrenoid
d. Flagellum
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b. AB
c. B
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b. Is vacuolated
c. Has no cross walls
d. Stores oil globules
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b. Father's sex cell
c. Mother's sex cell
d. Father's chromosome
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c. Amoeba

d. Chlamydomonas

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b. Scale

c. Skin

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b. Antagonism

c. Symbiosis

d. Parasitism

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b. Fruits eaters

c. Insect eaters

d. Fish catchers

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deficiency of

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b. Magnesium

c. Iron

d. Copper

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a. Kinds of animals inhabiting the area

b. Community of organisms in the region

c. Types of plants founds in the area

d. Nature of the soil in the area

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b. From mother to child
c. Sexual intercourse
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c. Beriberi
d. Sterility

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b. Liver, stomach, villi and colon
c. Oesophagus, bronchus, stomach anus
d. Spleen, duodenum, jejunum and rectum

19. Which of the following is not caused by a bacteria

a. Polio
b. Tetanus

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c. Tuberculosis
d. Typhoid

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c. Exhalation of carbon IV oxide from the lungs
d. Absorption of digested food particles

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c. Caterpillar
d. Maggot

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b. Spider
c. Snail
d. Millipede
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a. Carrots and mangoes
b. Rice and yyams
c. Butter and margarine
d. Beef and beans
25. Short-sightedness can be corrected by lens which are
a. Bi-convex
b. Plano

ANSWERS TO BIOLOGY 2007
1. C

11.
B

21.
D

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2. B

12.
B

22.
D

3. B

13.
C

23.
C

4. A

14.
C
5. D

15.
C
6. D

16.
B
7. A

17.
A
8. D

18.
B
9. C

19.
A
10. B

20.
A

BIOLOGY 2008

1. Which of the following features of euglea is found only in animals?
a. Flagellum
b. Pellicle
c. Pyrenoid
d. Granules
2. Cell with well defined membrane-bound nuclei are termed:
a. Membranous cell
b. Nucleated cells
c. Prokaryotic cells
d. Eukaryotic cell
3. If a homozygous tall man is married to a homozygous short woman, the offspring in the second filial
generation would be in the following ratio.
a. 1:3:1
b. 1:2:1
c. 2:2:0
d. 3:1:0

4. The cell wall of plants is secreted by;

a. Chloroplast

b. Cholesterol

c. Photoplast

d. Meristerm

5. The nucleous attains its maximum size during the interphase stage of mitotic cell division due to

a. DNA duplication

b. Accumulation of Ribosomal (rRNA) and ribosomal proteins

c. Distintegration of the nuclear envelope

d. Movement of chromosomes

6. Another name for rainfall is

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a. Precipitation

b. Waterfall

c. Drainage

d. Dristle

7. All of these except one is the quality of xerophytes

a. Well developed root system

b. Small leaves

c. Thick bark

d. Succulent leaves

8. salt- resistant organisms are commonly reffered to as

a. sacrophytes

b. xerophytes

c. halophytes

d. mesophytes

9. one of these is not a bacterium

a. streptococcus

b. pseudomonas

c. rickettside

d. E. coli

10. In the growth of microorganisms, the phase that is characterized with cell division is termed

a. Lag phase

b. Log phase

c. Interphase

d. Declining phase

11. One of these is a vector

a. Trypanosome

b. Plasmodium

c. Schistosome
d. Simulium
12. In tissue respiration, energy is stored in the form of
a. ADP
b. Triphosphate
c. ATP
d. Glycogen
13. One of the following pairs of hormones is responsible for both cell elongation and apical dominance
a. Auxim and gibberellins
b. Cytokinin and auxim
c. Gibberelin and cytokinin
d. Florigens and absissic
14. Which of the following names is associated with bone structure?
a. Haversian
b. Maltheus

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c. Orgoranti
d. Lumberca
15. The characteristic yellowish-brown colour of human faeces is due to the
a. Action of bile salt
b. Presence of fat
c. Action of bacteria
d. Inability of amylase to act on the food
16. The correct dental formula of dog is
a. I 2/3, C 1/1, PM 4/4, M2/3
b. I 2/3, C3/3, PM 4/4, M3/3
c. I 2/2, C1/1, PM2/2, M3/3
d. I1/1, C2/2, PM4/4, M3/3
17. One of the following is not true about gene mutation
a. It always affect the number of chromosome
b. It is known to be a source of new genes
c. It introduces a new trait into the population
d. It may not manifest phenotypically
18. One of the following hormones is responsible for metamorphosis in a toad
a. Pituitrin
b. Monotremes
c. Birds
d. Insects
19. All the following organism show oviparity except
a. Reptiles

b. Monotremes
c. Birds
d. Insects

20. One of the following specialized structures is stimulated by cold, touch, heat, pressure and pain
a. Motor neuron
b. Neurone
c. Receptor
d. Nerve cell

21. The term sere can best b defined as
a. Arid land
b. Rainforest
c. Estuarine
d. Savanna region

22. Plants with breeding roots grow commonly in
a. Arid land
b. Rainforest
c. Estuarine
d. Savanna

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23. One of the following is not an excretory product of animals
a. Carbon (IV) oxide
b. Urine
c. Ammonia
d. Faeces

24. Your school principal bends his lower aim to clean sweat from his face after a thorough fees drive. Which of
the following is true about this movement of the arm?
a. Contraction of the tendons and relaxation of the ligaments
b. Contraction of the tricep and relaxation of the bicep
c. Interplay between the synovial fluid and the bone capsule
d. Contraction of the flexor and relation of the extensor

ANSWERS TO BIOLOGY 2008

1. A
2. D
3. C
4. A
5. –
6. A
7. –

8. C
9. C
10. B
11. B
12. C
13. A
14. D
15. –
16. –
17. A
18. A
19. B
20. –
21. D
22. –
23. –
24. B

BIOLOGY 2009

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1. The study of reactions of organisms to physical and chemical factors in the environment is called…….

a. Adaptation
b. Ecology
c. Tolerance
d. Mesophytism

2. One of the following is not a terrestrial adaptation by organisms

a. Poorly development roots
b. Possession of lungs for respiration
c. Kidney for excretion
d. Possession of sweat glands

3. The part of the mammalian skin involved s temperature regulation is

a. Sebaceous gland
b. Sweat gland
c. Hair follicle
d. Hair papilla

4. An organism which exhibit extra-cellular digestion is ……..

a. Paramecium
b. Rhizopus
c. Spirogyra

d. Amoeba

5. Carbohydrates are food substances made up of the following elements and in the following ratio

a. Carbon, hydrogen and oxygen; 1:1:2

b. Carbon, nitrogen and oxygen 1:2:1

c. Oxygen, hydrogen and carbon: 2:1:1

d. Hydrogen, carbon and oxygen 2:1:1

6. The abbreviation NAD stands for

a. Nicotine Adenine Dincleotide

b. Nicotine Adenamide Dinucleotide

c. Nicotanamide Adenine Dinucleotide

d. Nicotine Ademine Dinucleoside

7. The deficiency disease associated with B12 is

a. Pellagra

b. Beri Beri

c. Pernicious anaemia

d. Haemophilia

8. Bacteria which deriive energy by oxidizie inorganic compounds are said to be

a. Chemosynthetic

b. Biosynthetic

c. Photosynthetic

d. Saprosynthtic

9. Which group of organelles listed below is involved in manufacturing substances by the cell?

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a. Lysosome, Vacuole, Ribosome

b. Vacuole, Rough ER, Smooth ER

c. Vacoule, Rough ER, Smooth ER

d. Rough ER, Lysosome, Vacoule

10. Plants return water to the atmosphere mainly through

a. Respiration

b. Transpiration

c. Photosynthesis

d. Excretion

11. Which of the following is not concerned with over-crowding?

a. Competition

b. Aggression

c. Symbiosis

d. Death

12. On crossing a pure red flowered plant with that of a white pre breed (assuming that R is dominant over r). the most likely result in the first filial generation (F1) would be;

a. All white fllowers
b. 25% white and 75% red flowers
c. 75% white and 25% red flowers
d. All red flowers
13. Which of the following is not a morphological variation
a. Blood group
b. Height
c. Skin color
d. Weight
14. One of the following is not a producer
a. *Oscillatoria*
b. Fungi
c. Algae
d. Spirogyra
15. Salt-Resistant organisms are referred to as……
a. Hydrophytes
b. Xerophytes
c. Halophytes
d. Mesophytes

ANSWERS TO BIOLOGY 2009

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

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6. C
7. C
8. A
9. D
10. B
11. C
12. B
13. A
14. A
15. C

BIOLOGY 2010

1. In birds, it is females that determine the sex of the off springs because
a. The males are helpless and inactive
b. The females are homogametic

c. The males are heterogametic

d. The females are heterogametic

2. Your school principal bends his hand to clean sweat from his face after a thorough school fees drive. Which

types of muscles are responsible for this movement of his hand?

a. Retractor muscles

b. Triceps

c. Triceps

d. All of the above

3. Muscles are attached to bones by means of

a. Ligaments

b. Tendons

c. Cartilage

d. Synovial membrane

4. A hybrid between a horse and a donkey is called

a. Alfadei

b. Mule

c. Cattalo

d. None of the above

5. If a man with blood group B, genotype BO married a woman with blood group A, genotype AA, what is the

possibility of getting an offspring with blood group B in the F1 generation

a. ½

b. 1/3

c. 0

d. 2/4

6. A food web is …….feeding relationship.

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a. Complex

b. Linear

c. Straight-forward

d. Trophic level

7. Bacteria were first discovered as "animalcules" by

a. Charles Darwin

b. Robert Brown

c. Purlcyne

d. Van leewenhoeck

8. The following are wildlife resources

a. Bamboos

b. Gorilla

c. Gallus gallus

d. Python

9. The non-flowering plants are classified into three main groups except

a. Thallophyta

b. Spermaatophyta

c. Pteridophyta

d. Bryophyte

10. All except one are functions of the plant cell wall

a. Mechanical strength and skeletal support for cells

b. Control cell growth

c. Allows plasmodesmata to pass and form living connections with the cell.

d. Ensures distribution of molecules in the cell.

11. The most primitive grade/level of organism in organism is

a. Cellular level

b. Cell-tissue level

c. Organ-system level

d. Protoplasmic level

12. In cell division, the division of the nucleus is termed……. While that of the cytoplasm is celled

a. Cytokinesis, Protokinesis

b. Karyokinesis, Cytokinesis

c. Protokinesis, Cytokinesis

d. Karyokinesis, Protokinesis

13. The stage between telophase and the next mitotic division is called

a. Prophase

b. Anaphase

c. Interphase

d. Metaphase

14. The basic source of energy for all life processes in nature is

a. Feeding

b. Respiration

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c. Digestion

d. Photosynthesis

15. One of these is not an example of physiological variation

a. Height

b. Blood groups

c. Ability to taste chemical substances

d. Ability to roll the tongue

16. Ultra-filtration of waste products in the kidney takes place in

a. Distal tube

b. Proximal tubule

c. Loop of Henle
d. Glomerulus
17. One of these is NOT an excretory product of animals
a. Feaces
b. Urine
c. Sweat
d. Ammonia
18. The smallest bone in man is
a. Wrist bones
b. Ossicles
c. Pelvic bone
d. Coccyx
19. Which of the following transports mineral salts and water in plants
a. Collenchymas
b. Parenchyma
c. Sclerenchyma
d. Phloem cells
20. Which of these classes of vertebrates does the cartilaginous fishes belong to
a. Osteichthyes
b. Chondrichthyes
c. Cyclostmata
d. None of the above

CHEMISTRY 2005

1. The trioxocarbonate (IV) of which of the metals is soluble in water?
a. Potassium
b. Lead
c. Copper
d. Magnesium
e. Zinc

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2. The proportion of petrol obtainable from crude oil can be increased by
a. Polymerization lighter fractions
b. Hydrogenating lighter fractions
c. Cracking heavier fractions
d. Distilling heavier fractions

3. Alkenes have the general formula CnH2n. when hydrogenated, they produce compounds with the general
formula
a. CnH2n+1
b. CnH2n-2

c. CnH2nOH
d. CnH2n+2
e. CnH2n-1
4. The atom of an element X is represented as
. The basic properties of X depend on the value of
a. Y
b. Z
c. Y-Z
d. Y+Z
5. The atomic number of chlorine is 17. What is the number of electrons in a chloride ion
a. 16
b. 17
c. 18
d. 19
e. 20
6. The conclusion from Rutherford's alpha scattering experiment is that
a. Atoms are mostly empty space with a small nucleus
b. Emission from radioactive substances consist of three main components
c. There is a nuclear pull on orbital electrons
d. Electrons are deflected by both magnetic and electric fields
e. Atoms are made of three fundamental particles: electrons, neutrons and protons
7. If a metal R forms a compound with the formula R(NO3)2 the formula off its tetraoxosulphate (IV) is
a. R(SO4)2
b. RSO4
c. R2SO4
d. R2(SO4)3
e. R2(SO4)2

8. Which of the following decreases when a given mass of gas is compressed to half its initial volume
a. Average intermolecular distance
b. Frequency of collision
c. Number of molecules present
d. Atomic radius of each particle

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e. Bond energy of particles
9. What volume of hydrogen will be produced if 100cm3 of ammonia is completely decomposed at constant
temperature and pressure, the equation for the reaction is: 2NH3(g) N2(g)+3H2(g)
a. 50cm3

b. 150 cm3
c. 200 cm3
d. 300 cm3
e. 100 cm3

10. Calculate the mass of chlorine gas which occupies a volume of 1.12dm3 at s.t.p [Cl = 35.5, 1 mole of gas
occupies 22.4dm3 at s.t.p]
a. 1.80g
b. 3.55g
c. 7.10g
d. 15.50g
e. 15.00g

11. The gas given off when NH4Cl is heated with an alkali is
a. H2
b. Cl2
c. N2
d. NH3
e. CO2

12. The gas given produced when calcium is added to water is
a. Ethyne
b. Methane
c. Ethane
d. Oxygen
e. Carbon(iv)oxide

13. 10cm3 of 1M NaOH solution is diluted with 100cm3. What is the molarity of this diluted solution
a. 0.01M
b. 1.0M
c. 0.1M
d. 0.001M
e. 1.01M

14. Chlorine bleaches by
a. Absorption
b. Reduction
c. Oxidation
d. Dehydration
e. Hydration

15. The empirical formula of a compound which contains 40% carbon, 6.7% hydrogen and 53.3% oxygen is
a. C2HO
b. CH2O

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c. C2H4O
d. CH4O2
e. C2H2O
16. The catalytic hydrogenation of oils and fats
a. Produces soap
b. Converts propan-1,2,3-triol to ethane dioic acid
c. Produces esters
d. Produces margarine
e. Produces carbonhydrates
17. Which of the following does not undergo polymerization
a. C2H2
b. C2H4
c. C3H6
d. C2H3Cl
18. An atom is made up of
a. Proton and neutron
b. Proton and electron
c. Proton, electron and neutron
d. Proton only
e. None of the above
19. Oxidation of ethanol results in the formation of
a. Sodium ethoxide
b. Ethyl ethanoate
c. Ethanoic acid
d. Ethene
e. Ethane

H H
H
H
C
C
C

C
H
H
H
H

20. Which of the following is the correct IUPAC name of the molecule above
a. But-1-ene
b. Trans But-2-ene

c. But-3-ene
d. Prop-2-ene
e. Pent-3-ene

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ANSWERS TO CHEMISTRY 2005

1. A
2. D
3. D
4. B
5. The chloride ion has 18 electrons
6. B
7. B
8. The average intermolecular distance of a given mass of gas is compressed to half its initial volume (A)
9. B
10. B
11. D
12. D
13. –
14. B
15. C =12, H=1, O = 16, therefore
C
H
O

40/12, 6.7/1, 53.3/16 = 3.3/3.3, 6.7, 3.3/3.3; 1 : 2: 1
Therefore the empirical formula = CH2O

16. D
17. C
18. C
19. B
20. C

CHEMISTRY 2006

1. A mixture of iodine and sulphur crystals can be separated by treatment with
a. Water to filter off
b. Carbon(IV)sulphide to filter off iodine
c. Ethanoic acid to filter off sulphur
d. Methanol to filter off iodine
2. Sieving is a technique to separate mixtures containing solid particles of
a. Small sizes
b. Large sizes
c. Different sizes
d. The same size

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3. Which of the following compounds is composed of Al, Si, O and H
a. Epson salt
b. Limestone
c. Clay
d. Urea
4. 50cm3 of carbon (ii) oxide was exploded with 150cm3 of air containing 20% oxygen by volume. Which of the
reactants was in excess.
a. Carbon (II)oxide
b. Carbon (IV)oxide
c. Oxygen
d. Nitrogen
5. How many moles of HCL will be required to react with potassium heptaoxodichromate (VI) to produce 3
moles of chlorine?
a. 14
b. 12
c. 11
d. 10
6. The ratio of the initial to the final pressure of a given mass of gas is 1:1.5. calculate the final volume of the gas if the initial volume was 300cm3 at the temperature
a. 120cm3
b. 200 cm3
c. 450 cm3
d. 750 cm3
7. The partial pressure of oxygen in a sample of air is 425mmHg and the total pressure is 780mmHg. What is the
mole fraction of oxygen?
a. 0.203
b. 0.579

c. 2.030

d. 5.790

8. The fundamental difference between the three states of matter is the

a. Shape of their particles

b. Number of particles in each state

c. Shape of the container they occupy

d. Degree of movement of their particles

9. Which of the following statements is correct about the periodic table

a. Elements in the same period have the same number of valence electrons

b. The valence electrons of the elements in the same period increases progressively across the period

c. Elements in the same group have the same number of electrons shells

d. The non-metallic properties of elements tend to decrease each period

10. The electron configuration of 22X2+ ion is

a. 1s22s22p6 3s23p64s23d2

b. 1s22s22p6 3s23p64s23d1

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c. 1s22s22p6 3s23p6

d. 1s22s22p6 3s23p64s2

11. Which of the following types of bonds does not involve the formation of new types of substances?

a. Metallic

b. Covalent

c. Co-ordinate

d. Electrovalent

12. The knowledge of half-life can be used to

a. Create an element

b. Detect an element

c. Split an element

d. Irradiate an element

13. The shapes of CO2, H2O and CH4 respectively are

a. Bent, linear and tetrahedral

b. Bent, tetrahedral and linear

c. Linear, bent and tetrahedral

d. Tetrahedral, linear and bent

14. The distance between the nuclei of chlorine atoms in a chlorine molecule is 0.194nm the atomic radius of

chlorine atom is

a. 0.097nm

b. 0.194nm

c. 0.388nm

d. 2.388nm

15. The noble gas, argon is used for

a. Electric welding

b. Welding brass

c. Underwater welding

d. Steel welding

16. A side effect of soft water is that

a. It gives offensive taste

b. Excess calcium is prescipitated

c. It attacks lead contained in pipes

d. It encourages the growth of bacteria

17. Water molecules can be ligands especially when they are bonded to

a. Alkaline earth metals

b. Alkali metals

c. Transition metals

d. Group VII elements

18. The air pollutant unknown in nature is

a. NO

b. CO

c. NCHO

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d. DDT

19. 1.0dm3 of distilled water was used to wash 2.0g of a precipitate of AgCl. If the solubility product of AgCl is 2.0

X 10-10mol2dm3, what quantity of silver was lost in the process?

a. 2.029 X 10-3mol dm-3

b. 1.1414 X 10-3mol dm-3

c. 2.029 X 10-5mol dm-3

d. 1.1414 X 10-5mol dm-3

20. Hydration of ions solution is associated with

a. Absorption of heat

b. Reduction of heat

c. Conduction of heat

d. Liberation of heat

21. A trihydric alkanol is

a. Glycerol

b. Phenol

c. Glycol

d. Ethanol

22. Catalytic hydrogenation of benzene produces

a. Oil

b. Cyclohexane
c. Cyclohexane
d. Margarine
23. Which of the following represents hybridization in ethyne?
a. Sp2
b. Sp2d
c. Sp3
d. Sp
24. A characteristic reaction of the compounds with the general formula CnH2n is
a. Esterification
b. Polymerization
c. Decarbonization
d. Substitution
25. The pair of organic compounds that are isomers is
a. Benzene and methylbenzene
b. Tricloromethane and tetrachloromethane
c. Ethanol and propanone
d. But-1-ene and but-2-ene

CHEMISTRY 2006 ANSWERS
1. D

13.
C

25.
D
2. A

14.
-

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3. B

15.
B
4. D

16.
D
5. –

17.
-
6. D

18.
C
7. B

19
8. D

20
9. D

21
10. D

22.
Cyclohexane
11. A

23.

12. B

24.
D

CHEMISTRY 2007

1. In any chemical reaction, the total mass of the products is always equal to that of the reactants. The
statement is the law of
a. Definite proportion
b. Multiple proportion
c. Conservation of matter
d. Constant composition
e. Reciprocal proportions
2. The number of replaceable hydrogen atoms in one molecule of an acid indicates
a. Acidity
b. Basicity
c. Alkalinity

d. Reactivity
e. pH value
3. The oxidation number of phosphorus in
is
a. +1
b. +2
c. +3
d. +4
e. +5
4. Which of the following is accompanied by the first ionization energy of element X
a.

b.

c.

d.
e.

5. Mg(s) + 2HCl MgCl +H2. From the equation, what mass of hydrogen would be produced if 12.0g of
magnesium reacted completely with hydrochloric acid?

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a. 1.0g
b. 2.0g
c. 6.0g
d. 12.0g
e. 24.0g
6.

reaction above is

a. An alpha particle emission

b. An endothermic reaction

c. A thermal ionization

d. A nuclear fission

e. A nuclear fusion

7. Glucose can be obtained by …….. from starch

a. Hydrogenation

b. Hydrolysis

c. Dissociation

d. Dialysis

e. Dehydration

8. When naphthalene on heating changes from the solid state directly to gaseous state, it undergoes

a. Evaporation

b. Sublimation

c. Combustion

d. Ionization

e. Decomposition

9. Which of the following is likely to have the highest degree of hardness?

a. Carbonated water

b. Distilled water

c. Acidified water

d. Rain water

e. Lime water

10. Study the reaction represented by the equation below: Alkanol +alkanoic acid *concH2SO4* Alkanoate and water

a. Neutralization

b. Hydrolysis

c. Hydrogenation

d. Dehydration

e. Decomposition

11. Given the symbol

, it can be deduced that Y has

a. 60 neutrons

b. An atomic number of 20

c. A mass number of 60

d. 40 electrons

e. 40 protons

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12. If an element X with electronic configuration 2,8,3 combines with another element Z with electronic
configuration 2,8,6, the compound formed will have the formula
a. XZ
b. XZ2
c. X2Z
d. X2Z3
e. X3Z2
13. What mass of copper will be deposited by the liberation of CU2+ when 0.1F of electricity flows through an
aqueous solution of copper(II) salt? [Cu = 64]
a. 64g
b. 32g
c. 12.8g
d. 6.4g
e. 3.2g
14. A positive brown ring test indicates the presence of
a. Fe3+
b. N

c. S

d. N

e.
15. Metals which react with steam only when they are red-hot include
a. Copper
b. Sodium
c. Calcium
d. Gold
e. Iron
16. What is the relationship between the compounds represented by the following structures

Br
H
H
H

and

C
C
C
C
Br
Br

H
Br
They are:
a. Allotropes
b. Dimmers
c. Polymers
d. Geometric isomers
e. Resonance hybrid
17. Which of the following oxides is amphoteric?
a. Na2O
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b. Fe2O3
c. Al2O3
d. CaO
e. CuO
18. Which of the following statements is/are correct about electrochemical cells?
a. Reduction occurs in one half-cell while oxidation in the other
b. The electrode in a half-cell may take part in the reaction
c. Potential difference between two part in the reaction
d. Electrical energy is converted into chemical energy
e. All of the above
19. Which of the following gases will bleach moist red litmus paper?
I: Cl2 II: SO2 III: SO3
IV: HCl
a. I and II
b. II and III
c. III and IV
d. II and IV
e. I and IV

20. During the treatment of water for town supply, water is passed through layers of sand beds in order to
a. Soften water
b. Filter the water

c. Decolorize water
d. Destroy the germs in the water
e. Coagulate colloidal particles in water

21. The presence of unpaired electrons in an atom of an atom of a transition metal gives rise to

a. Para magnetism
b. Malleability
c. Ductility
d. Shiny appearance
e. Purity

22. What elements/compounds is oxidized in the reaction represented by the following equation?

3Cu + 8HNO3
Cu(NO3)2 + 2N) + 4H2O
a. Oxygen
b. Hydrogen
c. Copper
d. Nitrogen
e. HNO3

23. A concentrated solution containing H+, Cu2+, OH- and Cl- was electrolyzed using platinum electrodes which will be discharged at the cathode?

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a. H
b. CU2+
c. OH-
d. Cl-

24. A measure of the degree of disorder in a chemical system is known as the
a. Enthalpy
b. Free energy
c. Activation energy
d. Entropy
e. Equilibrium

25. Copper (II) tetraoxoosulphate (VI) is often added to swimming pools because it
a. Prevents the growth of algae
b. Coagulates suspended particles
c. Neutralizes dissolved gasses in water
d. Reacts with any excess chlorine present
e. Increases the amount of dissolved oxygen

ANSWERS TO CHEMISTRY 2007

1. C

2. B
3. PO-34 X + 4(-2) = -3; X - 8 = -3, X = 8-3=5 (E)
4. B
5. A
6. D
7. B
8. B
9. A
10. B
11. B
12. D
13. Cu+2 -2e- Cu(s); 2F of Cu 64g of Cu; 0.1F of Cu 0.1 X 64g/2F = 3.2g of copper (E)
14. B
15. E
16. –
17. –
18. A
19. A
20. B
21. A
22. A
23. Cu is prefrentially dischaarged because it is lower than H2 in the series

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24. Entropy
25. A

CHEMISTRY 2008

1. With which of the following is the quantum number 'm' associated?
a. The effective volume of the orbital
b. The shape of the orbital
c. The spin of the orbital
d. The spin of the orbital
2. The molarity of a 2% weight of aqueous solution of H2SO (molecular weight 98g is)
a. 4.55
b. 3.55
c. 1.55
d. 0.02
3. What mass of gold is deposited during the electrolysis of gold (II) tetraoxosulphate

(VI) when a current of 15A is passed for 193 seconds? (Au =97gatom-1, F = 96,500Columbs mol-1

a. 0.97g
b. 3.94g
c. 2.97g
d. 19.70

4. The hybridization of carbon atom in ethyne is

a. Sp4
b. Sp3
c. Sp2
d. Sp

5. In which of the following is the oxidation state of oxygen different from its value in water

a. OH-
b. H3O
c. H2O2
d. SO2

6. Which of the following equations represents spontaneous fusion?

a.

b.

c.

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d.

7. What is the composition of the nucleus of 35Cl if the atomic number is 17?

a. Mass number is 35, atomic is 17 and neutron number 18

b. Atomic number is 17, electron number is 18 and mass number 35

c. Atomic number is 19, proton number 17 and mass number 35

d. Mass number is 35, electron number 18 and neutron number 17.

8. Which of the following statements is the correct definition of electron affinity?

a. Energy absorbed when an electron is removed from an atom in the solid state to produce an ion

b. Energy absorbed when an electron is removed from an atom in the gas phase to produce an ion

c. Energy released when an electron is added to neutral atom in the gas phase to produce an anion

d. Energy released when an atom is added to a neutral atom in the liquid phase to produce an anion

9. Which of the following is not true of the periodic table elements?

a. Crossing a period the ionization energies and electron affinities drop

b. Crossing a periodic table the ionization energies and electro negativities rise

c. Descending a group the atomic, covalent and metallic ratio all increase

d. Descending a group, the ionic radii for a given change increases

10. The IUPAC name for the compound, CH3CH2-C=C(CH3)2

a. 2,3-dimenthylpent-2,3-ene

b. 2,3-dimenthylpent-2-ene

c. 3,4-dimenthylpent-2-ene

d. 3,4-dimenthypent-3-ene

11. Applying Boyle's law when the volume of give mass of gas is reduced, the reduced, the pressure.

a. Reduces

b. Decreases

c. Rises

d. Increases

12. Cellulose and starches can be classified as one of the following:

a. Sugar

b. Sucrose

c. Hydrocarbons

d. Carbohydrates

13. The chemical reaction of ethyl alcohol used as laboratory burners is produced?

a. 1dm3CO2

b. 2dm3CO2

c. 3dm3CO2

d. 4dm3CO2

14. For long life of electric bulbs argon gas is contained in the bulbs. A 100 watt bulb with approximate volume of 132cm3 contains 3 X 103 mol of argon. How many moles of argon

would be expected in 200 watt bulb whose
volume is about 195cm3?
a. 1.33 X 10-2
b. 4.33 X 10-2
c. 4.33 X 10-3

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d. 1.33 X 10-3

15. The value and units for the constant R depend on the units of P.V and T.V is the molar volume ad P and T are
standard pressure and temperature. What is the value of R, if P = 1 atm and V =22.4141?

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CHEMISTRY 2008 ANSWERS

1. D

17.
D

2. –

19.
D

3. C

20.
D
4. B

21.
A
5. A

22.
D
6. B

25.
B
7. A
8. C
9. D
10. C
11. B
-

CHEMISTRY 2009

1. A reaction that gives off energy is called
a. Exothermic
b. Endothermic
c. Spontaneous
d. Non-spontaneous
e. Entropically driven

2. How much heat in J is required to raise the temperature of 5.0g of water from 25.00C to 35.00C?
(Cwater=4.184J/kgram)
a. 7075J
b. 12J
c. 21J
d. 105J
e. 210J

3. What is the magnitude of heat released if 0.12g of hydrogen gas reacts with an excess of oxygen gas to

produce water? 2H2+O2 H2O(

a. 71.6KJ

b. 5080KJ

c. 355..8KJ

d. 17.7KJ

e. 572KJ

4. What is the ground state electron configuration for fluorine

a. 1s22s22p63s23p64s1

b. 1s22s22p6

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c. 1s22s22p5

d. 1s21p62s1

e. 1s22p7

5. Balance the following reaction

a. W =1, x =1, y = 1, z=1

b. W =1, x =5, y = 3, z=4

c. W =2, x =5, y = 3, z=4

d. W =1, x =5, y = 1, z=4

e. W =1, x =1, y = 3, z=1

6. Balance the reaction and determine the limiting reagent if 4.0 moles of H2 is allowed to react with 2.0 moles of nitrogen H2+N2 NH3

a. Hydrogen

b. Nitrogen

c. Ammonia

d. Both hydrogen and nitrogen

e. There is no limiting reagent

7. For the reaction above (problem 6) how many moles of ammonia can be produced?

a. 5.3 moles

b. 4.0 moles

c. 9.3 moles

d. 2.7 moles

e. 6.0 moles

8. From problems 6 and 7, if only 1.5 moles of ammonia are produced, what is the percentage yield of ammonia

a. 40%

b. 56%

c. 28%

d. 38%

e. 16%

9. How many moles of grams of sodium would be required to prepare 1.5g of NaCl?

a. 0.91g

b. 0.59g

c. 1.2g

d. 0.75g

e. 0.30g

10. A sample of magnesium reacts with an excess of HCl and produces 2.5L of hydrogen gas at 0.97 atm and

298K. how many moles of hydrogen gas are produced? 2Mg + 2HCl 2MgCl2 +H2

a. 10.1 moles

b. 0.063 moles

c. 75.6 moles

d. 0.099 moles

e. 2.5 moles

11. Determine the molarities of a solution made from 2.5g of CaCl2 and enough water to make a 0.500L solution.

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a. 0.045M

b. 0.090M

c. 5.0M

d. 1.3 X 10-3M

e. 0.15M

12. Determine the grams of NaCl in 10ml of a 0.50M solution

a. 2.38g

b. 1.17g

c. 6.11g

d. 0.0451g

e. 0.29g

13. How many ml of 18.0M H2SO4(aq) would be needed to prepare 500.0ml of 1.5M H2SO4(aq)

a. 0.0427ml

b. 0.05ml

c. 54.0ml

d. 6.0ml

e. 41.7ml

14. For the reaction of HNO3 with KOH: HNO3+KOH H2O +KNO3. How many ml of 0.15M HNO3 would be

required to react with 25.0ml of 0.33M KOH?

a. 20ml

b. 55ml

c. 25ml

d. 11ml
e. 33ml
15. What is the pressure of a 2.5g sample of gaseous carbon monoxide in a 2.5L flask at 300K?
a. 1.0 atm
b. 760mmHg
c. 0.79 atm
d. 0.88 atm
e. 863 mmHg

ANSWERS TO CHEMISTRY 2009
1. A
2. C
3. D
4. C
5. B
6. B
7. –
8. E

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9. B
10. –
11. D
12. D
13. D
14. D
15. E

CHEMISTRY 2010
1. The name of the compound with the following structure is

CH3

H3C
CH2
CH
CH
2

CH2
CH2
a. 1-ethyl, 1-methyl-butane
b. 1-ethyl-1-methylbutane
c. 3-methylhexane
d. 4-methylhexane
e. 3mmethyl hexane

2. The balanced equation for the reaction of butane, C4H10, with oxygen to form carbon dioxide and water is

a. C4H10 + 6 O

2 4CO2+5H2O
b. C4H10 + O2 4CO2 + 2H2O
c. C4H10 + 6O2 4CO2+5H2O
d. 2C4H10 + 6 O

2 8CO2+20H2O
e. C4H10 + 6 O

2 4CO2+10H2O

3. The following is the net ionic equation for the reaction of sodium chloride with silver nitrate.

a. NaClaq + AgNO3 (aq) NaNO3 aq + AgCl(s)
b. NaClaq + AgNO3aq NaNO3(s)+ AgCl(aq)
c. NaClaq + AgNO3aq NaNO3(aq)+ AgCl(aq)
d. Na+(aq) + Cl-(aq) NaCl(aq)
e. Ag+(aq) + Cl- AgCl(s)

4. A compound is determined to contain 58.774% carbon, 13.810% hydrogen and 27.416% nitrogen by mass.

What is the molecular formula

a. C3H7N

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b. C2H7N
c. C2H8N
d. C5H14N
e. C7H16N4

5. A reaction that gives off energy is called

a. Exothermic
b. Endothermic

c. Spontaneous
d. Nonspontaneous
e. Enthropically driven

6. How much heat in J is required to raise the temperature of 5.0g of water from 25.00C to 35.00C? (Cwater =
4.184J/Kgram)
a. 7075J
b. 12J
c. 21J
d. 105
e. 210J

7. The energy required to melt ice is 6.01 KJ/mol. How much energy is required to melt 3.0g of ice
a. 18.0KJ
b. 1.0J
c. 324J
d. 36KJ
e. 0.50J

8. What is the magnitude of heat released if 0.125 g of hydrogen gas reacts with an excess of oxygen gas to
produce water? $2H_2 + O_2$ H_2O Hreaction = -572KJ
a. 71.6KJ
b. 4580KJ
c. 35.8KJ
d. 17.7KJ
e. 572KJ

9. What element has the following ground state electron configuration? $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$
a. Na
b. Ti
c. Rb
d. K
e. Ar

10. What is the ground state electronic configuration for flourine
a. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$
b. $1s^2 2s^2 2p^6$
c. $1s^2 2s^2 2p^5$
d. $1s^2 1p^6 2s^1$
e. $1s^2 2p^7$

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11. Which of the following elements is a diatomic molecule at ordinary temperature and

pressures?

a. Oxygen
b. Carbon
c. Sodium
d. Calcium
e. Sulfur

12. The majority of elements are classified as
a. Non metals
b. Metals
c. Mettaloids
d. Semimetals
e. Gases

13. The smallest whole number ratio of atoms in a compound
a. Depends on the temperature
b. Is equal to the ratio of the masses
c. Depends on how the compound was made
d. Is definite and constant for a compound
e. Is called the molecular formula

14. Isotopes are different in
a. Geometric shape
b. Number of electrons
c. Number of protrons
d. Mass number
e. Atomic number

15. The correct name for Ca(NO3)2 is
a. Calcium (II) nitrate
b. Calcium (II) nitrite
c. Calcium nitride
d. Calcium nitrate
e. Calcium dinitrate

16. The correct name for P2O is
a. Phosphorus pentoxide
b. Diphosphorus pentoxide
c. Phosphorus (V) oxide
d. Phosphors (II) oxide (V)
e. Phosphorus oxide

17. The density of C2H5O is 0.782g/mL. what is the volume of 5.6 g of C2H5O?
a. 4.4mL
b. 5.6mL
c. 8.7mL
d. 6.5mL
e. 7.2mL

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18. A 4.51 gram sample of C3H6O contains how many moles of carbon?
a. 0.233moles
b. 0.007 moles
c. 0.026 moles
d. 0.165 moles
e. 2.79 moles
19. A 0.934 gram sample of CO2 contains
a. 1.28 X 10-22 atoms of C and 2.56 X 10-22 atoms of O
b. 5.62 X 1023 atoms of C and 1.12 X 1024 atoms of O
c. 1.28 X 1022 atoms of C and 2.56 X 1222 atoms of O
d. 1.68 X 10-22 atoms of C and 3.36 X 10-22 atoms of O
e. 1.68 X 1022 atoms of C and 128 X 1022 atoms of O
20. The amount of sodium hydroxide, NaOH, contained in 35.2 mL of 0.255M solution is:
a. 0.3592g
b. 0.0539g
c. 0.3359g
d. 0.3359g
e. 0.0359g

ANSWERS TO CHEMISTRY 2010

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

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