



**UNIVERSITY OF LAGOS**

**AKOKA-YABA**

**NIGERIA**

**2011/2012 SESSION**

**POST-UTME SCREENING PRACTICE**

**QUESTIONS**

**COMPILED BY THE ADMISSION COMMITTEE**

**ANSWERS**

- I. Mathematics**
- II. English Language**
- III. General Paper**

POST UTME SCREENING PRACTICE QUESTION

I. MATHEMATICS

- A solid is made up of a hemisphere of radius  $x$  cm, and a cone of height  $x$  cm of the same radius as the hemisphere. What is the volume of the composite solid?

(a)  $\frac{4}{3}\pi x^3$       (b)  $\frac{12}{5}\pi x^3$       (c)  $\frac{12}{5}\pi x^3$       (d)  $\pi x^3$
- What is the difference in the local time between two places in latitude  $55^\circ W$  if they are located at longitudes  $8^\circ W$  and  $18^\circ E$  respectively.

(a) 60 mins      (b) 80 mins      (c) 98 mins      (d) 104 mins
- A solid sphere of radius  $x$  cm is placed in a cylinder of radius  $2x$  cm and height  $2x$  cm. The cylinder is then filled with water to the brim and the solid gently withdrawn. Find the volume of the water in the cylinder in  $cm^3$ .

(a)  $\frac{28}{3}\pi x^3$       (b)  $24\pi x^3$       (c)  $\frac{20}{3}\pi x^3$       (d)  $8\pi x^3$
- The earth rotates on its own axis once in 24hrs. What is the speed in  $km/hr$  of a place whose latitude is  $30^\circ S$ . (Take  $2\pi R$  to be equal to  $4 \times 10^4 km$ )

(a)  $2,140 km/hr$  (b)  $1,443 km/hr$  (c)  $1,200 km/hr$  (d)  $1,000 km/hr$
- The minor sector of a circle of diameter 3.6cm subtends angle  $35^\circ$  at the center. What is the perimeter of the sector?

(a) 5.8cm      (b) 4.7cm      (c) 2.9cm      (d) 1.1cm
- A regular polygon of  $(2k + 1)$  sides has  $140^\circ$  as the size of each interior angle. Find k.

(a) 4      (b)  $4\frac{1}{2}$       (c) 8      (d)  $8\frac{1}{2}$
- Solve the following simultaneous equation

$$x + y = 10, \quad x^2 + y^2 = 58$$

(a)  $x = 7, y = 3$  or  $x = 3, y = 7$       (b)  $x = -7, y = -3$  or  $x = -3, y = -7$

(c)  $x = -7, y = 3$  or  $x = 3, y = -7$       (d)  $x = 7, y = -3$  or  $x = -3, y = 7$
- A man is  $x$  years old which his son is  $y$  years old. The sum of their ages is twice the difference of their ages. If the product of their ages is 675, find the age of the man.

(a) 40 years      (b) 42 years      (c) 55 years      (d) 45 years
- Let the universal set  $U = \{1, 2, 3, 4, 5, 6\}$ .

$A = \{1, 2, 3\}$  and  $B = \{2, 4, 6\}$ . Then  $A \cap B^c$  is

(a)  $\{2\}$       (b)  $\{1, 3\}$       (c)  $\{4, 6\}$       (d)  $\{1, 2, 3, 5\}$
- Simplify  $\frac{\sqrt{2} + \sqrt{30}}{\sqrt{7}}$  as far as possible.

- (a)  $\sqrt{14}$       (b)  $7\sqrt{2}$       (c)  $\frac{7\sqrt{2}}{\sqrt{7}}$       (d)  $\frac{2\sqrt{2}+2\sqrt{3}}{\sqrt{7}}$

1

11. Factorize fully:  $px^2 - py^2 + qy^2 - qx^2$ .

- (a)  $(p - q)(x + y)(x - y)$     (b)  $(p - q)(x^2 + y^2)$     (c)  $(p + q)(x - y)(x + y)$     (d)  $(p - q)(x^2 + y^2)$

12. Evaluate  $\log_3 9 - \log_{27} 3 + \log_{\sqrt{3}} 9$

- (a)  $6\frac{1}{3}$       (b)  $5\frac{1}{2}$       (c) 9      (d)  $5\frac{2}{3}$

13. In a class of 30 students, there are 10 who wear spectacles and 16 girls. There are 8 boys who do not wear spectacles. How many girls wear spectacles?

- (a) 3      (b) 4      (c) 5      (d) 6

14. Solve the equation  $\log_2 x - \log_2(x - 1) = 2$

- (a) 2      (b)  $1\frac{1}{2}$       (c)  $1\frac{1}{25}$       (d) no solution

15.  $(x - 2)$  is a factor of  $x^2 - 3x^2 + kx + 14$ . The value of k is

- (a)-5      (b) -2      (c) 2      (d) -3

16. Factorize the polynomial  $x^3 - 7x + 6$

- (a)  $(x - 3)(x - 1)(x + 2)$     (b)  $(x - 3)(x - 1)(x - 2)$     (c)  $(x + 3)(x + 1)(x + 2)$     (d)  $(x - 1)(x - 6)$

17.  $y$  is inversely proportional to the square of  $x$ . When  $x = 3$ , then  $y = 4$ . Find the constant of proportionality.

- (a) 48      (b)  $\frac{4}{9}$       (c) 2.25      (d) 36

18. The solution to the inequality  $5 - 2x > 11 - 4x$  is

- (a)  $x > 3$       (b)  $x > 3$       (c)  $x > 1$       (d)  $x < 1$

19. If  $\begin{vmatrix} x & 2 \\ 1 & 5 \end{vmatrix} = \begin{vmatrix} x & 3 \\ 2 & 3 \end{vmatrix}$ , find the value of x

- (a) 2      (b) -2      (c) 0      (d) -1

20. The determinant of  $\begin{pmatrix} 1 & 2 & 0 \\ 3 & 2 & 1 \\ 4 & 2 & 1 \end{pmatrix}$  is



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19. In which continent is Mount Everest?
- A. Asia
  - B. North America
  - C. South America
  - D. Africa
  - E. Europe
20. Which of these people is not an explorer?
- A. Vasco Da Gama
  - B. Christopher Columbus
  - C. Ferdinand Magellan
  - D. David Livingstone
  - E. None of the above
21. What is the difference between 2:45 am and 12:32 pm?
- (A) 9Hrs 47min      (B) 14Hrs 10min      (C) 5Hrs 25min      (D) 10Hrs 17min
22.  $4\frac{3}{4} - 2\frac{1}{2} \times \frac{1}{2} =$
- (A)  $\frac{4}{3}$       (B)  $\frac{14}{3}$       (C)  $\frac{9}{8}$       (D)  $\frac{3}{2}$
23. 2 scores plus 4 dozens multiplied by 14 equals?
- (A) 118      (B) 1232      (C) 1882      (D) 1432
24.  $33\frac{1}{3}$  of 100 equal?
- (A)  $33\frac{1}{3}$       (B) 30      (C) 3      (D) 33
25. 1800 multiplied by what number will give you 100800
- (A) 56      (B) 28      (C) 41      (D) 38
26.  $5.8 \times 6.1 \times 9.8 =$
- (A) 480.4      (B) 350.3      (C) 560.8      (D) 260.7
27. A farmer has 41 bags of oranges. Each bag contains 59 oranges each. How many oranges does the farmer have?
- (A) 3324      (B) 1591      (C) 2831      (D) 2419
28. If 16 of the same book weight 4kg. How much does one book weigh?
- (A) 20g      (B) 25g      (C) 55g      (D) 40g
29. What is 5 % of N575?
- (A) 30.8      (B) 28.75      (C) 25.5      (D) 55.5

30. What is the difference between 500 multiplied by 700 and 700 multiplied by 500?  
 (A) 1000 (B) 100 (C) 0 (D) 10000

22.

21. In Fig.1, O is the centre of the circle.

$\angle AOB = 130^\circ$  Find  $\angle ACB$ .

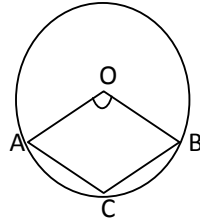


Fig.1

- (a) 115 (b) 135 (c) 70 (d) 65
22. Fig.2 shows a circle of radius 4cm. The area of the shaded segment is

- (a)  $4\pi \text{ cm}^2$  (b)  $4\pi - 8 \text{ cm}^2$  (c)  $84 \text{ cm}^2$  (d)  $2\pi - 4 \text{ cm}^2$

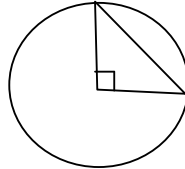
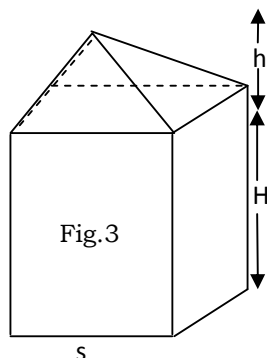


Fig.2

23. Fig.3 shows a pyramid on top of a cuboid. The height of the cuboid is Hcm, the height of the pyramid is b, cm, and the square base of both shapes has side s cm. find the volume of the shape.



- (a)  $s^2(H + h) \text{ cm}^3$  (b)  $s^2(H + h) \text{ cm}^3$  (c)  $\frac{1}{3}s^2(H + h) \text{ cm}^3$  (d)  $\frac{1}{2}s^2(2H + h) \text{ cm}^3$

24. If  $y = \sin(x^2 + 7)$ , then  $\frac{dy}{dx}$  is  
 (a)  $2x \cos(x^2 + 7)$  (b)  $(2x + 7) \cos(x^2 + 7)$  (c)  $-2 \cos(x^2 + 7)$  (d)  $2x \cos x$
25. The line  $y = kx - 3$  is perpendicular to the line  $2y + 3x = 7$ . The value of  $k$  is  
 (a)  $-\frac{1}{3}$  (b)  $-\frac{2}{3}$  (c)  $\frac{2}{3}$  (d)  $\frac{1}{3}$
26. The midpoint of the line segment joining  $(-3, -3)$  and  $(5, 7)$  is  
 (a)  $(3, 5)$  (b)  $(3, 2)$  (c)  $(2, 5)$  (d)  $(1, 6)$
27. The solution of the inequality  $x^2 + 3x - 10 < 0$  is  
 (a)  $-2 < x < 5$  (b)  $x < -5$  or  $x > 2$  (c)  $2 < x < 5$  (d)  $-5 < x < 5$
28. A binary operation is defined by  $a * b = a + b - 3$ . The identity is  
 (a) 3 (b) -3 (c) 1 (d) 0
29. A binary operation is defined by  $a * y = xy - x + y$ . The value of  $(3 * 4) * 5$  is  
 (a) 81 (b) 61 (c) 57 (d) 73
30. Find the difference between the mean and the median of the numbers 1, 2, 3, 4, 5, 7, 8, 9 and 10  
 (a) 0 (b)  $\frac{1}{4}$  (c) 5 (d)  $\frac{1}{2}$
31. There are eight men and nine women on a committee. In how many ways can a subcommittee of two men and three women be chosen?  
 (a) 2,352 (b) 112 (c) 6,188 (d) 28,224
32. Change  $671_{\text{nine}}$  to base 8  
 (a)  $550_{\text{eight}}$  (b)  $540_{\text{eight}}$  (c)  $671_{\text{eight}}$  (d)  $1046_{\text{eight}}$
33. Write  $\frac{14}{\sqrt{3}-\sqrt{5}}$  in the form  $a\sqrt{5} + b\sqrt{3}$ , where  $a$  and  $b$  are rational.  
 (a) 7 (b)  $7\sqrt{5} + 5\sqrt{3}$  (c)  $7\sqrt{5} - 7\sqrt{3}$  (d)  $7\sqrt{3} + 7\sqrt{5}$
34. In the relation  $\log_x y = z$ , write  $x$  in terms of  $y$  and  $z$ .  
 (a)  $x = z^y$  (b)  $x = z^y$  (c)  $x = z^{1/y}$  (d)  $x = z^{1/y}$
35. Solve the equation  $\sqrt{x+7} = x - 5$ .



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- (a) 9                      (b) 5, -7                      (c) 2                      (d) 2, 9

36. Let  $y = \frac{4x+3}{2x-7}$ . Write  $x$  as a function of  $y$ .

- (a)  $x = \frac{2y-3}{5y+3}$       (b)  $x = \frac{5y-3}{7y+4}$       (c)  $x = \frac{5y+3}{7y-4}$       (d)  $x = (5y + 3)(2y - 4)$

13. The Parliament of the United States of America is called:

- A. House of Parliament
- B. National Assembly
- C. Congress
- D. Assembly of Lawmakers
- E. None of the above

14. Cote d'Ivoire is formerly known as?

- A. Yamassokou
- B. Ivory Coast
- C. Gold Coast
- D. Rhode Coast
- E. Diamond Haven

15. The process of preservation, protection and wise use of natural resources is called:

- A. Fermentation
- B. Preservation
- C. Conservation
- D. Ecology
- E. Zoning

16. Ballet and Tango are types of:

- A. Song
- B. Dancing
- C. Cycling
- D. Swimming
- E. Horse Ridding

17. The first person to develop atomic bomb was:

- A. Albert Einstein
- B. Charles De Gaulle
- C. Thomas Jefferson
- D. T. S. Elliot
- E. Plato

18. The process by which the people in a country is given an opportunity to elect, choose or reject new government is known as:
- A. Referendum
  - B. Plebiscite
  - C. Election
  - D. Ratification
  - E. None of the above

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7. A system of government based on the ideological belief of equality of people and concentration of national resources in the hands of the State is called:

- A. Fanaticism
- B. Egalitarianism
- C. Communism
- D. Democracy
- E. Utopianism

8. An instrument used in finding ways and navigation is called:

- A. Map
- B. GPS
- C. Compass
- D. Compound
- E. None of the above

9. A computer is made of:

- A. hardware
- B. software
- C. None of the above
- D. A & B.
- E. A only

10. Which of these continents is the coldest in the world?

- A. Asia
- B. Africa
- C. Antarctic
- D. Europe
- E. America

11. What is the name of the world's highest mountain?

- A. Mount Kilomajaro
- B. Mount Everest
- C. Mount Cameroon
- D. Mountain Nkoyo
- E. None of the above.

12. What name is the Parliament of Nigeria called:

- A. House of Representative
- B. Senate
- C. State House of Assembly
- D. National Assembly
- E. All of the above

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37. The second and fifth terms of an arithmetic progression are 6 and -48, respectively. The first term is  
 (a) -3 (b) 3 (c) 12 (d) -12
38. Find the positive solution of the equation  $\log(x+1) + \log(x+4) = 1$ .  
 (a) 6 (b) 0 (c) 2 (d) 1
39. ₦72000 is invested at 80% simple interest. After how many years has it reached ₦87 840?  
 (a)  $2\frac{3}{4}$  years (b) 2 years (c) 3 years (d)  $2\frac{1}{2}$  years
40. Suppose that  $p$  is the probability that an event occurs, and that  $q$  is the probability that the event does not occur. Which of the following is true?  
 (a)  $p = q$  (b)  $p + q = 1$  (c)  $pq = 0$  (d)  $pq = 1$
41. Suppose  $x$  and  $y$  are positive numbers for which  $x > y$ . Which of the following is not true?  
 (a)  $x^2 > y^2$  (b)  $-x < -y$  (c)  $\frac{1}{x} > \frac{1}{y}$  (d)  $3x > 2y$
42. Fig.4 shows a trapezium. The height is 8m, one of the parallel sides is 10m and the area is  $104\text{m}^2$ . Find the other parallel side.
- Fig.4

The diagram shows a trapezium with two horizontal parallel sides. The top side is shorter than the bottom side. A vertical line segment with arrows at both ends indicates the height, which is labeled as 8m. The bottom parallel side is labeled as 10m.
- (a) 16m (b) 10m (c) 13m (d) 10.4m
43. Find the remainder when  $x^3 - 3x^2 + 4x - 7$  is divided by  $(x + 2)$   
 (a) -3 (b) -7 (c) -35 (d)  $x^2 - 5x + 14$
44. If  $\frac{dy}{dx} = 6x^2 + 15x^4$  and  $y = 7$  when  $x = 2$ , find  $y$ .  
 (a)  $2x^3 + 3x^5 + 7$  (b)  $12x + 60x^3 - 497$  (c)  $12x + 60x^2 + 7$  (d)  $2x^3 + 3x^5 - 105$
45. The long hand minute of a clock is 7cm long. What distance does the tip of the minute hand move in  $1\frac{1}{4}$  hours? (Take  $\pi = \frac{22}{7}$ )  
 (a) 33cm (b) 44cm (c) 55cm (d) 65cm



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Questions 46 and 47 refers to the points  $A(-2,3)$  and  $B(4,-5)$ .

46. The distance  $|AB|$  is:

- (a) 10 units    (b)  $\sqrt{8}$  units    (c)  $\sqrt{40}$  units    (d)  $\sqrt{14}$  units

47. The midpoint of AB is

- (a) (3,-4)    (b)  $(-1,1)$     (c)  $(1,-1)$     (d)  $(-3,4)$

48. Find the sum to infinity of the series

$$\frac{1}{2} - \frac{1}{4} + \frac{1}{8} - \frac{1}{16} + \dots$$

- (a) 1    (b)  $\frac{1}{3}$     (c)  $\frac{2}{3}$     (d) 2

49. Find the solution set for the set  $(x - 2)(x - 1) > 0$ .

- (a)  $x > 2$     (b)  $x < 2$     (c)  $x < 1$     (d)  $x < 1$  or  $x > 2$ .

50. The solution set of the inequality  $|2x + 6| < 10$  is;

- (a)  $(-3,2)$     (b)  $(-5,2)$     (c)  $(-8,2)$     (d)  $(-3,8)$

51. Write the 7<sup>th</sup> term of the sequence  $\{1 + (-1)^n\}$

- (a) 0    (b) 1    (c) 2    (d) 8

52. If  $x, 2x + 1, 3x - a$  form an A.P. find  $a$

- (a) 2    (b) -2    (c) 1    (d) -1

53. The fifth term of the sequence 1, 21, 51, 91.....is

- (a) 131    (b) 141    (c) 151    (d) 161

54. Let  $X = \{a, b, c, d\}$  which statement is correct?

- (a)  $\{a\} \in X$     (b)  $\{a, b\} \supset X$     (c)  $b \in X$     (d)  $n(x) = 4$

55. The distance from the points (3, -2) to the line  $3y + 2x + 5 = 0$  is

- (a)  $\frac{5}{\sqrt{13}}$     (b)  $\frac{23}{\sqrt{13}}$     (c)  $\frac{7}{\sqrt{13}}$     (d)  $\frac{7}{\sqrt{5}}$

56. Find the slope of the line which is perpendicular to the line  $3x + 5y + 17 = 0$ .

- (a)  $5/3$     (b)  $-3/5$     (c)  $-5/3$     (d)  $17/5$

**III. <sup>6</sup> GENERAL PAPER**

*Answer the following questions by choosing one of the options*

1. A low land between two hills is called
  - A. Island
  - B. Valley
  - C. Plateau
  - D. Lake
  - E. Mountain
  
2. Which of these animals is not a member of dog family
  - A. Jackal
  - B. German shepherd
  - C. Tiger
  - D. Yorkshire terrier
  - E. Rottweiler
  
3. The process in which the food we eat is broken down into substance that can be used by the body is called:
  - A. Digestion
  - B. Circulation
  - C. Tissue
  - D. Respiration
  - E. Excretion
  
4. A frightening dream is called
  - A. Blush
  - B. Nightmare
  - C. Night Anguish
  - D. Night Fear
  - E. None of the above
  
5. Which of these is not a type of eagle?
  - A. Short-toed
  - B. Booted
  - C. Bonelli
  - D. All of the above
  - E. None of the above
  
6. What was the former name of present Zimbabwe?
  - A. Rhodesia
  - B. Yamashoma
  - C. Orange Republic
  - D. Brazzaville

E. Oceania



- B. reticence
- C. sensibility
- D. pervasiveness

39. The greatness of the creator of the universe is always *inexpressible* to many adherents of certain faiths.

- A. inevitable
- B. wonderful
- C. ineffable
- D. unbearable

40. We *made a pile* in the business deal.

- A. lost a lot of money
- B. earned a lot of money
- C. broke even
- D. cut corners

57. Find the intercept on the x and y axes respectively of the line  $3x-2y+6=0$ .
- (a) (3,2)      (b) (2,3)      (c) (3,-2)      (d) (-2,3)
58. If  $f(x+2) = 3x^2 - 2x + 5$ , find  $f(1)$
- (a) 8      (b) 10      (c) 6      (d) 3
59. If  $\alpha$  and  $\beta$  are the roots of the equation  $2x^2 + 3x - 9=0$ , find  $\frac{1}{\alpha} + \frac{1}{\beta}$
- (a)  $-\frac{1}{3}$       (b)  $\frac{2}{3}$       (c) 3      (d)  $\frac{1}{3}$
60. The nth term of a sequence is given by  $U_n = 2+3U_{n-1}$  while the  $U_4=36+U_3$ , find the third term of the sequence.
- (a) 1      (b) 5      (c) 17      (d) 51
61. If  $\alpha$  and  $\beta$  are the roots of the equation  $2x^2 - 5x + 6 = 0$ . Find  $\alpha^2 + \beta^2$
- (a)  $\frac{1}{2}$       (b) 3      (c)  $-\frac{5}{2}$       (d)  $\frac{1}{4}$
62. If  $x - 2$  and  $x + 1$  are factors of equation  $x^2 + px^2 - 4xq = 0$ , determine p, q
- (a) -3,12      (b) 3,-12      (c) -3,-12      (d) -1,0
63. If  $\frac{s+2t}{(s+1)(s-2)} = \frac{p}{s+2} + \frac{q}{s-2}$ , find p
- (a) 3      (b) 2      (c) 1      (d) -8
64. A 16m ladder is placed against a house so that its base is 8m from the house. What angle does the ladder makes with the ground?
- (a)  $65^\circ$       (b)  $60^\circ$       (c)  $34^\circ$       (d)  $10^\circ$
65. Find the trigonometric function value of  $\cos (315^\circ)$ .
- (a)  $\frac{\sqrt{2}}{2}$       (b)  $\sqrt{2}$       (c)  $\frac{1}{\sqrt{2}}$       (d) undefined
66. Convert  $-320^\circ$  to radian measure. Give answer using 3.14 for  $\pi$
- (a)  $32\pi$       (b) 2.57      (c)  $-5.58$       (d) 1.31
67. Solve for  $\sec^2 x - \frac{3}{4}\sec x = \frac{1}{4}$

(a)  $\frac{3x^2 + 4x + 1}{x}$

(b)  $\frac{3x^2 - 4x + 1}{x}$

(c)  $\frac{3x^2 + 4x - 1}{x}$

(d)  $\frac{3x^2 - 4x - 1}{x}$

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68. Given that  $\tan \theta = \frac{3}{4}$  and  $\theta$  is in the second quadrant. Find  $\sin 2\theta$
- (a)  $-\frac{2}{13}$       (b)  $30.70$       (c)  $-\frac{24}{25}$       (d)  $10$
69. Find Arc sin 0.2334 in degrees, using tables
- (a)  $2.91$       (b)  $21^{\circ}.30'$       (c)  $13^{\circ}.31'$       (d)  $13^{\circ}.40'$
70. Find the components of this vector  $u+v$ , where  $u = (3, -7)$  and  $v = (4, 2)$ .
- (a)  $(7, 5)$       (b)  $(7, 6)$       (c)  $(2, 5)$       (d)  $(3, 15)$
71. Simplify.  $(4-x^2)(2+x)^{-1/2}$
- (a)  $(2+x)\sqrt{(2-x)}$       (b)  $(2-x)\sqrt{(2+x)}$       (c)  $\frac{2-x}{\sqrt{(2-x)}}$       (d)  $\frac{2+x}{\sqrt{(2-x)}}$
72. Simplify.  $(2 - \sqrt{3})^2$
- (a)  $10 - 9\sqrt{3}$       (b)  $8 - 3\sqrt{3}$       (c)  $26 - 15\sqrt{3}$       (d)  $26 - 9\sqrt{3}$
73. The sum of an infinite geometric progression is  $2\frac{2}{7}$  and the first term is 4. What is the common ratio?
- (a)  $-2\frac{3}{4}$       (b)  $-\frac{3}{4}$       (c)  $\frac{3}{4}$       (d)  $2\frac{3}{4}$
74. Evaluate  $\frac{x^2+4}{2x^2-x-4}$  when  $x = -1$ .
- (a)  $0$       (b)  $-1$       (c)  $1$       (d)  $\frac{1}{3}$
75. If  $\frac{2m+n}{4m-3n} = 2$ , then  $\frac{3m+n}{2m+n}$  is equal to:
- (a)  $\frac{71}{32}$       (b)  $\frac{32}{71}$       (c)  $2$       (d)  $4$
76. If  $2x^2 - px + 6 = (2x - 6)(x - 1)$ , then  $p$  is equal to
- (a)  $-8$       (b)  $4$       (c)  $8$       (d)  $-4$
77. Which of the following is not a quadratic expression?
- (a)  $x^2 - 5$       (b)  $x(1 - 2x)$       (c)  $x(1 + x^2)$       (d)  $x^2 - \frac{3}{5}x + 1$

- B. Courage
  - C. Responsibility
  - D. Diligence
32. The *common* practice among some media practitioners is to be sensational in their reporting.
- A. prevalent
  - B. rampant
  - C. ordinary
  - D. cogent
33. That *fateful* decision changed the company's outlook in many ways.
- A. wonderful
  - B. disastrous
  - C. uncontrollable
  - D. unsuccessful
34. The accident victim received a *superficial* wound from the crash.
- A. a serious
  - B. a painless
  - C. an internal
  - D. an external
35. The boxer *fizzled out* just in the sixth round.
- A. knocked out his opponent
  - B. showed off his talents
  - C. became tired but fought on spiritedly
  - D. surrendered rather disappointingly
36. The manager described Mfon as *a man of vehement character*.
- A. weak and uninterested
  - B. strong and insistent
  - C. troublesome and noisy
  - D. clever and helpful
37. Obi's dog is old but still *lively*.
- A. attractive
  - B. howling
  - C. barking
  - D. frisky

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38.His *taciturnity* amazed everyone in the court during the legal tussle.

A.obliviousness

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- C. I did not go to England and could not go to Manchester City.
- D. I could not visit Manchester City because I did not want to go to England.

25. The man puts his foot down whenever he is convinced of his action.
- A. He desires to assert his will in the situation.
  - B. He makes his mark wherever he goes.
  - C. His attitude demonstrates someone who likes to oppress others around him.
  - D. He demonstrates firmness of character.

**In each of questions 26 to 40, choose the option *nearest in meaning* to the word or phrase in **italics**.**

26. No wonder Dekemi later became a detective; she has been very *observant*.

- A. curious
- B. perceptive
- C. inductive
- D. inquisitive

27. Nigeria has been playing a *vital* role in the political and economic development of Africa.

- A. creditable
- B. crucial
- C. respectable
- D. laudable

28. Emeka's painting was so *realistic* that it could almost have been a photograph.

- A. picturesque
- B. concrete
- C. lively
- D. authentic

29. *Courteously*, Ade stood back to let his teacher go first through the door.

- A. Patiently
- B. Politely
- C. Carefully
- D. Calmly

30. Many people used to live in *poverty*.

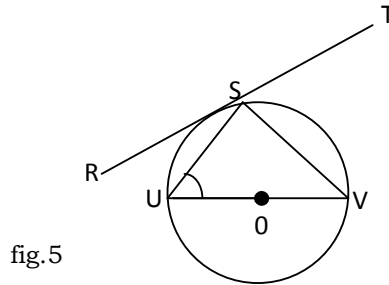
- A. instability
- B. want
- C. difficulty
- D. the slums

31. *Accountability* is certainly a desirable quality in a politician.

## A. Respectability

16

78. In fig.5 below, RST is a tangent to the circle centre O. It touches the circle at S. U and V are at the ends of a diameter, and  $\angle SUV = 48^\circ$ . Find  $\angle RSU$ .



- (a)  $40^\circ$       (b)  $130^\circ$       (c)  $42^\circ$       (d)  $90^\circ$
79. The bearing of A from B is  $280^\circ$ . Find the bearing of B from A.

- (a)  $80^\circ N$       (b)  $100^\circ$       (c)  $100^\circ$       (d)  $90^\circ$

Use frequency Table below to answer questions 80 to 82.

X	0	1	2	3
Frequency	20	18	7	5

80. Calculate the mean of x.  
 (a) 1.5      (b) 0.47      (c) 0.94      (d) 1
81. What is the median of x?  
 (a) 0      (b) 1      (c) 25.5      (d) 0.94
82. What is the range of x?  
 (a) 15      (b) 0 to 3      (c) 5 to 20      (d) 3
83. OAB is a sector of a circle of radius 8cm and centre O in fig.6 below. The length of the arc AB is 8cm. Find the area of the sector.

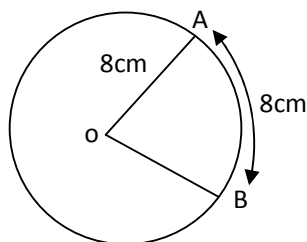




fig.6

- (a)  $32\text{cm}^2$       (b)  $64\text{cm}^2$       (c)  $30\text{cm}^2$       (d)  $60\text{cm}^2$

84. In Fig.7 below, find the value of x.

- (a)  $141^\circ$       (b)  $97^\circ$       (c)  $97^\circ$       (d)  $112^\circ$

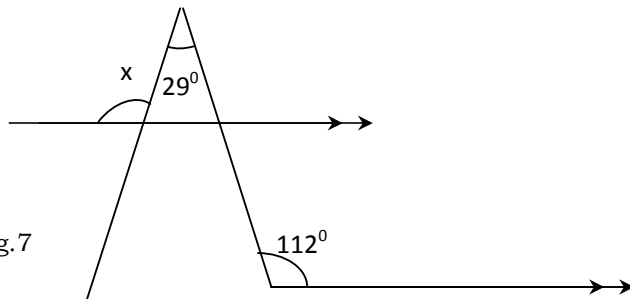


Fig.7

85. What value of  $k$  makes the expression  $p^2 - 18p + k$  a perfect square?

- (a)  $-9$       (b)  $9$       (c)  $-81$       (d)  $81$

86. For what value of x is the function  $y = \frac{7}{x+3}$  not defined

- (a)  $7$       (b)  $0$       (c)  $-3$       (d)  $3$

87. Evaluate  $(4 \times 10^3) \times (6 \times 10^2)$ , giving your answer in standard form.

- (a)  $2400\ 000$       (b)  $24 \times 10^5$       (c)  $2.4 \times 10^6$       (d)  $4.6 \times 10^2$

88. In fig.8 below, O is the centre of the circle,  $AC = 6$  cm and

$BC = 8$  cm. Find the circumference of the circle.

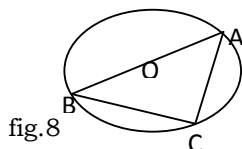


fig.8

- (a)  $10\pi$  cm      (b)  $5\pi$  cm      (c)  $4\sqrt{7}\pi$  cm      (d)  $10$  cm

89. In fig.9 below, O is the centre of the circle and  $\angle ACB = 130^\circ$ . Find  $\angle DOB$ .

- (a)  $100^\circ$       (b)  $130^\circ$       (c)  $80^\circ$       (d)  $25^\circ$

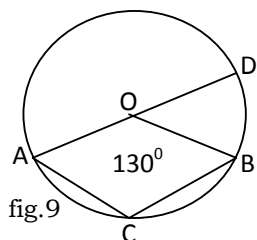


fig.9

90. Two ships leave the same port: one ship sails for 300 km on a bearing of  $340^\circ$ ; the other ships sails for 400 km on a bearing of  $250^\circ$ . The distance between the ships is

- (a)  $700$  km      (b)  $100$  km      (c)  $500$  km      (d)  $200$  km

17. If the rain hadn't fallen, we wouldn't have missed the match.
- A. The rain is falling, so we will miss the match.
  - B. The rain fell, so we didn't watch the match.
  - C. The rain fell, so we watched the match.
  - D. The rain didn't fall, so we didn't watch the match.
18. The new Headmaster hoped that his men would pull together.
- A. He expected that the men would cooperate with him.
  - B. He thought that the men would compose themselves at work.
  - C. He was certain that they would resign en masse.
  - D. He was certain that their condition would improve under him.
19. If the trader paid in full, his order was not pruned down.
- A. The trader who made full payment did not have his order reduced.
  - B. The trader who made some payment did not have his order delayed.
  - C. Unless the trader paid in full his order would be rejected.
  - D. As the trader did not increase his order, he did not need to pay in full.
20. The men were not pawns in someone else's political game.
- A. The action they executed was their idea.
  - B. The men used someone else's plan.
  - C. They were used by someone's political game.
  - D. They loved playing political games.
21. The crisis ended as suddenly as it began.
- A. The crisis had suddenly begun.
  - B. The crisis will not end suddenly.
  - C. The crisis stopped almost immediately.
  - D. The crisis will stop immediately.
22. One thing I will not be complaining about in my new job is a lack of excitement.
- A. The job is bad.
  - B. The job is exciting.
  - C. The job is not too exciting.
  - D. The job has been previously done.
23. The Governor parried all the questions put to him by the journalist.
- A. The Governor answered all the questions brilliantly.
  - B. The Governor evaded all the questions.
  - C. The Governor failed all the questions.
  - D. The Governor mastered all the questions.
24. If I visited England, I might go to Manchester City.
- A. When I go to England, I could go to Manchester City.
  - B. Whenever I visit England, I must go to Manchester City.

- B. Eye behaviour is one of the non-verbal ways of communicating.
  - C. Eye movement is the most potent means of expressing intimacy.
  - D. People are always offended by searching eye contact.
5. From the findings of the research described in the passage, one can reason that
- A. innocent people maintain longer eye contact than the guilty ones
  - B. guilty people make Jess frequent gazes during interrogation
  - C. 'shifty eyes' are equally induced by innocence and guilt
  - D. a feeling of guilt is occasioned by 'shifty eyes'.

## PASSAGE II

*Use the passage-below to answer questions 6 to 16. The passage has gaps numbered 16 to 26. Immediately following each gap, four options are provided. Choose the most appropriate option for each gap.*

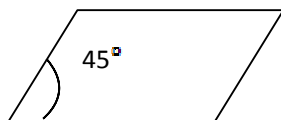
Two thirds of children in .... 6 [A: industrialized B. socialized C. technological D. modernized] societies no longer have family life. They are virtually abandoned to child - minders from a very tender age. 'The ... 7 [A. disregard B. indifference C. alienation D. inattention] from their mothers brings suffering and makes it impossible for them to achieve a healthy social life. The 8 [A. development B. increase C. appreciation D. inflation] in the number of suicides, the rates of drug addiction and ..... 9 [A. delinquency B. irresponsibility C. Satanism D. truancy] among young people may be to a large 'extent, due to these premature separations which take place before sufficient time has 10 [A. materialized B. occurred C. surfaced D. elapsed] for attachment to develop. 'This is one of the causes of psychosis in children today' says a psychiatrist who believes that breast-feeding is one of the basic cares which many children of this age are 11 [A. tantalized with B. denied of C. left with D. spared of). This psychiatrist argues that breast-feeding extends into the world outside the womb, a liquid bond with the inside of the mother's body; a bond 12 [A. close to B. the same as C. unrelated to D. irrelevant to] that which the baby had with the placenta inside the uterus. Rhythmic rocking to and fro is 13 [A. an elongation B. a demonstration C. a continuation D. a stretching] of the movement that the child experienced before it was born. As for the baby's 14 [A. squeezing against· B. separation from C. likeness for D. pressure against] its mother's body, it reminds the child of the ..... 15 .. [A. reassuring B. uncomfortable C. amusing D. unpleasant] pressure of the uterus, and enables it to 16 [A. unearth B. rediscover C. learn D. explore] the rhythms of its mother's breathing and

heartbeat.

In each of questions 17 to 26, select the option that *best explains* the information conveyed in the sentence.

14

91. A shopkeeper sold an item for N3 600, making a profit of 20%. Find the original cost of the item.  
 (a) ~~N~~2,880      (b) ~~N~~3,000      (c) ~~N~~4,500      (d) ~~N~~4,320
92. A flagpole of height 2.5 m casts a shadow of length 4m. Calculate the angle of elevation of the sun, correct to the nearest degree.  
 (a)  $32^\circ$       (b)  $58^\circ$       (c)  $39^\circ$       (d)  $51^\circ$
93. If  $4^{x+1} \times 8^{2x-1} = 16$ , find x.  
 (a) 1      (b)  $9\frac{1}{2}$       (c)  $\frac{2}{3}$       (d) -1
94. Evaluate  $22_{\text{three}} \times 102_{\text{three}}$ , leaving your answer in base 3.  
 (a)  $88_{\text{three}}$       (b)  $1021_{\text{three}}$       (c)  $10021_{\text{three}}$       (d)  $2244_{\text{three}}$
95. 8% of a certain sum of money is ~~N~~320. What is 10% of the sum?  
 (a) ~~N~~400      (b) ~~N~~256      (c) ~~N~~4 000      (d) ~~N~~ 800
96. A number is selected at random from the set  $\{3, 0, 5, \sqrt{4}, \sqrt{5}, \frac{2}{3}\}$ . What is the probability the number is rational?  
 (a)  $\frac{2}{5}$       (b)  $\frac{3}{5}$       (c)  $\frac{4}{5}$       (d)  $\frac{4}{3}$
97. The area of a circle is  $154\text{cm}^2$ . Find its circumference. (take  $\pi = \frac{22}{7}$ )  
 (a) ~~7cm~~      (b) ~~14cm~~      (c) ~~308cm~~      (d) ~~44cm~~
98. Two dice are thrown together. What is the probability of getting a sum of 5.  
 (a)  $\frac{1}{6}$       (b)  $\frac{2}{36}$       (c)  $\frac{1}{6}$       (d)  $\frac{1}{12}$
99. In fig.10 below, the acute angle of the parallelogram is  $45^\circ$ . One side is 8cm and the area is  $24\sqrt{2}\text{cm}^2$ , find the other side.



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fig.10

- (a) 12cm      (b) 10cm      (c) 6cm      (d) 4cm

100. Three times the tens digit of a two digit number is 2 greater than the unit digit. When the digits are interchanged the new number is 36 more than the original number. What is the original number?

- (a) 35      (b) 37      (c) 15      (d) 28

II. EN <sup>12</sup> LANGUAGE

Read passages **I and II**, carefully and answer the questions that follow.

PASSAGE I

One of the most potent elements in body language is eye behaviour. You shift your eyes, meet another person's gaze or fail to meet it - and produce an effect out of all proportion to the muscular effort you have made. When two people look searchingly into each other's eyes, emotions are heightened and the relationship tipped toward greater intimacy.

In normal conversation, each eye contact lasts only about a second before one or both individuals look away.

Because the longer meeting of the eyes is rare, it is weighted with significance when it happens and can generate a special kind of human-to-human awareness. Most of the time, a lingering look is interpreted as a sign of attraction and this should be scrupulously avoided except in appropriate circumstances. A young woman once complained, 'That man makes me so uncomfortable, half the time when I glance at him he's already looking at me - and he keeps right on looking.'

*Proper street behaviour requires a balance of attention and intention.* You are supposed to look at a passer-by just enough to show that you are aware of his presence. If you look too little, you appear haughty or furtive; too much and you are inquisitive. Usually what happens is that people eye each other until they are about eight feet apart, at which point both cast down their eyes.

Much of eye behaviour is so subtle that we react to it only on the intuitive level. This has been demonstrated in elaborate experiments. Subjects sit and talk in the psychologist's laboratory, innocent of the fact that their eye behaviour is being observed from behind a one-way vision screen. In one fairly typical experiment, subjects were induced to cheat while performing a task, then were interviewed and observed. It was found that those who had cheated met the interviewer's eyes less often than was normal, an indication that 'shifty eyes' can actually be a tip-off to an attempt to deceive.

However, none of the 'facts' of eye behaviour are cut and dried, for there are variations between individuals.

People use their eyes differently and spend different amounts of time looking at others. Besides, no pattern of eye behaviour is precisely predictable in any normal conversation.

Adapted from McQuade (1969), *Thinking in Writing*, p. 167

1. The young woman in the passage was uncomfortable because
  - A. the man appeared to be showing interest in her by his prolonged eye contact
  - B. the man's short and sharp gazes would tip the relationship toward greater intimacy
  - C. strangers who made the man's type of eye contact were likely to be dangerous
  - D. she was allergic to eye contact.
2. The reason given for the non-finality of research results on eye contact is
  - A. lack of concord and foresight among psychologists who carry out research on eye movement
  - B. lack of uniformity in eye behaviour and the variability of contact situation
  - C. that some subjects cheat during experiments, thus invalidating research findings
  - D. that research findings on eye contact have not been subjected to further empirical tests.

3. From the expression *proper street behaviour requires a balance of attention and intention*, it can be concluded that
  - A. even among strangers, attitudes and purposes can be deduced from eye behaviour
  - B. before walking the streets one must balance one's shifty eyes
  - C. when intimate groups meet in the streets, eye contact is usually longer
  - D. there is a balance between those with longer eye contact and those with shorter eye contact.
  
4. Which of the following can be concluded from the opening paragraph?
  - A. The effects of eye contact are always overwhelming.



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ENGLISH		GENERAL PAPER	
1. A	21. C	1.C	21. A
2. B	22. B	2.C	22. C
3. A	23. B	3.A	23. B
4. B	24. C	4.B	24. C
5. D	25. D	5.E	25. A
6. D	26. B	6. A	26. B
7. D	27. B	7. C	27. D
8. B	28. A	8. C	28. B
9. A	29. B	9. D	29. B
10. D	30. B	10.C	30. D
11. B	31. C	11.B	31. D
12. A	32. B	12.D	32. C
13. C	33. B	13. C	33.D
14. A	34. D	14. B	34. D
15. A	35. D	15. C	35. A
16. B	36. C	16. B	36. B
17. B	37. D	17. A	37. C
18. A	38. B	18. C	38. D
19. A	39. B	19. A	39. C
20. A	40. B	20. E	40. A

MATHEMATICS				
1. D	21. A	41. C	61. D	81. B
2. D	22. B	42. A	62. D	82. D
3. C	23. C	43. C	63. D	83. A
4. B	24. A	44. D	64. B	84. C
5. B	25. D	45. C	65. C	85. D
6. B	26. C	46. A	66. C	86. C
7. A	27. D	47. C	67. A	87. B
8. D	28. A	48. B	68. C	88. A

9. B	29. C	49. D	69. C	89. C
10. A	30. D	50. C	70. A	90. C
11. C	31. A	51. A	71. B	91. B
12. D	32. D	52. B	72. C	92. A
13. D	33. C	53. B	73. B	93. C
14. B	34. B	54. D	74. A	94. C
15. D	35. A	55. A	75. A	95. A
16. B	36. C	56. A	76. C	96. C
17. D	37. A	57. D	77. C	97. D
18. B	38. D	58. C	78. C	98. C
19. C	39. A	59. D	79. B	99. C
20. A	40. B	60. C	80. C	100. B