CHRIST HIGH SCHOOL

CHRIST HIGH SCHOOL PLOT 5, CHS STREET, KM 32, ABUJA-KEFFI ROAD UKE, NASARAWA STATE

SS 1 PAPER I GENERAL MATHEMATICS, SECOND TERM EXAMINATION 2024/2025 ACADEMIC SESSION

SUBJECT: GENERAL MATHEMATICS PAPER I
CLASS: SS 1
TIME: 2 Hours

NAME……

CANDIDATE'S ADMISSION NO.

INSTRUCTION

Write your name and number in the space provided on your answer booklet.

The paper I is objective test (50 questions)

Use **HB pencil** throughout and shade properly.

Calculator and Mathematical tables may be used in any question.

Think carefully before you shade the answer spaces; erase completely any answer you wish to change.

Now answer all the following questions.

FOR EXAMINER'S USE	
Total Score:	+

PAPER I

(OBJECTIVES) (50 MARKS)

1. Mr. Alex is 4 times as old as his son, Simon. 7 years ago, the sum of their ages was 76 years. How old is Simon?
   A. 12
   B. 18
   C. 22
   D. 15
   E. -18
2. Evaluate $\frac{1}{2}+\frac{3}{20}+\frac{5}{200}+\frac{7}{2000}$, correct to three decimal places
   A. 0.685
   B. 0.680
   C. 0.679
   D. 0.678
   E. 0.670
3. The length of a piece of stick is 1.75 m. A girl measured it as 1.8m. Find the percentage error.
   A. $\frac{284}{7}\%$
   B. $\frac{29}{7}\%$
   C. 5%
   D. $\frac{20}{7}\%$
   E. $\frac{5}{7}\%$
4. Evaluate correct to four significant figures (573.06×184.25).
   A. 105600.00
   B. 105622.00
   C. 105500.00
   D. 105532.00
   E. 105700.00
5. If $x = 4\ and\ y = -3$, find the values of; $\frac{3y+(x+y)^2}{x-y}$
   A. $-\frac{8}{7}$
   B. $-\frac{4}{7}$
   C. $\frac{8}{7}$

D. $\frac{4}{7}$

E. $-\frac{2}{7}$

6. If $2x^2 + kx - 14 = (x + 2)(2x - 7)$, find the value of k.
   A. 2
   B. -3
   C. 4
   D. 5
   E. -6
7. The statements K ^ L is said to be true when
   A. The result is contradiction
   B. k is false and L is false
   C. K is true and L is false
   D. The result is tautology
   E. K is true and L is true
8. A rectangle has length $y\ cm$ and width$(y + 2)\ cm$. if the perimeter is $16\ cm$, find the value of y.
   A. 5cm
   B. 4cm
   C. 6cm
   D. 2cm
   E. 3cm
9. Factorise $6a^2 - 14a - 12$
   A. $(3a + 2)(a - 3)$
   B. $(6a + 2)(a - 3)$
   C. $(a - 2)(a - 2)$
   D. $(a + 2)(a - 2)$
   E. $2(a + 2)(a - 2)$
10. If P and Q are two statements, under what condition would P ⇒ Q be false.
    A. If p is true q is true
    B. If p is true and q is false
    C. If p is false and q is false
    D. If p is false and q is true
    E. If p and q are the same
11. The connective ↔ stands for

A. Conjunction
B. Disjunction
C. Implication
D. Bi-implication
E. Multi-implication

12. Which of the following is not a quadratic expression?
A. $y = 2x^2 - 5x$
B. $y = x(x - 5)$
C. $y = x^2 - 5$
D. $y = 5(x - 1)$
E. $y = x - 2x^2$

13. One factor of $7x^2 + 33x - 10$ is
A. $7x + 5$
B. $7 - 2$
C. $7x - 2$
D. $x - 5$
E. $2x + 2$

14. Solve $3^{5x} \div 3^x = (3^4)^2$
A. $\frac{1}{3}$
B. $\frac{1}{2}$
C. 2
D. 3
E. -2

15. Which of these is correct for length of an arc of an angles?
A. $\frac{\theta}{360} \times 2\pi r$
B. $\frac{1}{2}ab^2$
C. $\frac{\theta}{360} \times \pi r^2$
D. $2(L + B)$
E. $\pi r^2 h$

16. Which of the following statements is true?
A. Accra is in Ghana and Lagos is in Nigeria
B. Accra is in Nigeria and Lagos is in Nigeria.

C. Accra is in Ghana and Lagos is in Ghana.
D. Accra is in Nigeria and Lagos is in Ghana.
E. None of the above.

17. A sector of a circle radius 21cm subtends an angle of 70^0 at the centre. Calculate the area of the sector.
A. 269.5cm²
B. 235.7cm²
C. 40.43cm²
D. 28.2857cm²
E. 26.09

18. Find the quadratic equation whose roots are -3 and 5
A. $x^2 - 2x - 15 = 0$
B. $2x^2 + 2x - 15 = 0$
C. $2x^2 + x - 8 = 0$
D. $2x^2 - x - 15 = 0$
E. $2x^2 + x + 15 = 0$

19. A bricklayer measured the length of a wall and obtained 4.10m. if the actual length of the wall is 4.25m, find his percentage error.
A. $3\frac{9}{17}\%$
B. $7\frac{1}{2}\%$
C. $4\frac{6}{13}\%$
D. 9%
E. 44%

20. One of the root of the equation $3x^2 - 7x - 6 = 0$
A. $\frac{-2}{3}$
B. -2
C. $\frac{1}{2}$
D. $\frac{-3}{2}$
E. 1

21. If Q is a statement 'it is raining'. Find Q v ~Q
A. Tautology
B. Contradiction

C. True, false
D. False, true
E. Simple statement

22. The negation of the statements 'Ibadan is the largest town in Nigeria'
A. Ibadan is not largest town in Nigeria
B. Ibadan is the largest town in Accra
C. Ibadan is the largest town in Nigeria
D. Ibadan is the largest state in Nigeria
E. Ibadan maybe the largest town in Nigeria

23. An arc of a circle with radius of 14cm subtends an angle of 135^0 at the centre. Calculate the length of the arc.
(Take $\pi = \frac{22}{7}$)
A. 11cm
B. 22cm
C. 33cm
D. 44cm
E. 55cm

24. Which of the following statements is (are) false?
i. The diagonals of a kite bisect each other and are equal.
ii. The opposite sides of a rectangle are parallel.
iii. The opposite angles of a rhombus are equal.
iv. A pair of the opposite angles in a kite are equal.
v. None of the above
A. I and II
B. I, II and III
C. II, III and V
D. II, IV and V
E. I only

25. Given the statements:
P: The leader is human.
Q: The leader is weak.
Which of the following describes the compound statement: 'the leader is not human or the leader is weak'?
A. P ^ ~Q

B. ~P ^ Q
C. ~P v Q
D. ~P v ~Q
E. P v ~Q

26. While doing his physics practical, Edna recorded a reading as 1.12cm instead of 1.21cm. calculate his percentage error.
A. 5.44%
B. 6.44%
C. 7.44%
D. 1.44%
E. 8.44%

27. Any expression of the form $ax^2 + bx + c$ with the highest power of 2 is referred to as
A. Linear equation
B. Algebraic equation
C. Quadratic equation
D. Simultaneous equation
E. Root of the equation

28. Solve $169 = a^2$
A. $a = 13\ or - 13$
B. $a = 13\ twice$
C. $a = -13\ or - 13$
D. $a = 10\ or - 13$
E. $a = 13\ or - 12$

29. If $A = \{1, 2, 8, a, 5, b\} and\ B = \{set\ of\ all\ alphabets\}$. Find $A \cap B$.
A. $\{ab, c\}$.
B. $\{abc\}$.
C. $\{ab\}$.
D. $\{a, b, c\}$.
E. $\{a, b\}$.

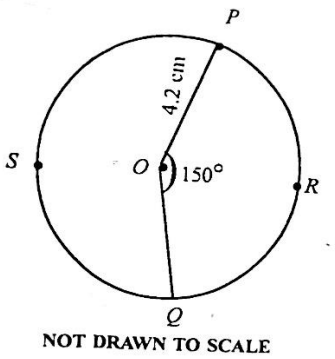
30. Disjunction is a compound statement formed by joining two simple statements with---
A. “And”
B. “Or”

C. “Not”
D. “If and only if”
E. “Implies”

31. A path traced out by a point constrained to move in accordance with given conditions is called
    A. Equidistance
    B. Locus of a point
    C. Bisector
    D. Construction
    E. Measurement
32. A fraction of the total distance around the circumference is called
    A. perimeter of a sector
    B. perimeter of a segment
    C. An arc of a circle
    D. Surface area of trapezoidal
    E. Area of parallelogram
33. The length of a rectangle is 10 cm. if its perimeter is 28 cm, find the area.
    A. $30\ cm^2$
    B. $40\ cm^2$
    C. $60cm^2$
    D. $80\ cm^2$
    E. $90\ cm^2$
34. A cylinder, opened at one end, has a radius of 3.5 cm and height 8 cm. calculate the total surface area. $\left[take\ \pi = \frac{22}{7}\right]$
    A. $126.5\ cm^2$
    B. $165.0\ cm^2$
    C. $212.0\ cm^2$
    D. $214.5\ cm^2$
    E. $226.5\ cm^2$
35. Find the volume of a cuboid if the height $z = 5\ cm$, breadth $y = 11\ cm$, and lenth $x = 12\ cm$.
    A. $60\ cm^3$
    B. $360\ cm^3$
    C. $460\ cm^3$

D. $660\ cm^3$

E. $760\ cm^3$



In the diagram, $< POQ = 150^0$ and the radius of the circle PSQR is 4.2 cm. $\left[take\ \pi = \frac{22}{7}\right]$

Use the information to answer questions 36 and 37

36. Find the length of the minor arc PRQ.

A. $11.00\ cm$

B. $15.40\ cm$

C. $17.64\ cm$

D. $23.10\ cm$

E. $25.00\ cm$

37. Find the area of the sector OPSQ.

A. $15.40\ cm^2$

B. $17.64\ cm^2$

C. $23.10\ cm^2$

D. $32.34\ cm^2$

E. $43.40\ cm^2$

38. The lengths of the parallel sides of a trapezium are $9\ cm$ and $12\ cm$. If the area of the trapezium is $105\ cm^2$, find the perpendicular distance between the parallel sides.

A. $5\ cm$

B. $7\ cm$

C. $10\ cm$

D. $15\ cm$

E. $18\ cm$

39. Find the volume of a cone of radius $3.5\ cm$ and vertical height $12\ cm$.

A. $15.5\ cm^3$

B. $21.0\ cm^3$

C. $142.0\ cm^3$

D. $154.0\ cm^3$

E. $315.5\ cm^3$

40. A rectangle has width $\frac{3}{4}\ cm$ and an area $3\frac{3}{8}\ cm^2$. Find the length.

A. $6\ cm$

B. $4\frac{1}{2}\ cm$

C. $2\frac{5}{8}\ cm$

D. $12\ cm$

E. $\frac{2}{5}\ cm$

41. Solve :$6x^2 = 5x - 1$.

A. $x = 2,3$

B. $x = 0,3$

C. $x = \frac{1}{2}, \frac{1}{3}$

D. $x = \frac{1}{2}, -\frac{1}{3}$

E. $x = \frac{3}{2}, \frac{1}{3}$

42. Express 0.00629946 to 3 significant figures.

A. 0.000

B. 0.006

C. 0.006210

D. 0.00629

E. 0.00630

43. Evaluate $\frac{6.42+2.13}{4.1-2.85}$, correct o two significant figures.

A. 6.9

B. 6.8

C. 5.9

D. 5.8

E. 5.4

44. Which of the following option is not a special angle?
    A. 30^0
    B. 45^0
    C. 60^0
    D. 90^0
    E. 100^0
45. Factorise $16y^3 + 16y^2 + 4y$
    A. $(2y + 1)(2y + 1)$
    B. $4y(2y + 1)(y - 1)$
    C. $4y(2y - 1)(2y + 1)$
    D. $4y(2y - 1)(2y - 1)$
    E. $4y(2y + 1)(2y + 1)$
46. Construct a quadratic equation whose roots are 5 and -8
    A. $y^2 + 3y - 40 = 0$
    B. $y^2 - 3y - 40 = 0$
    C. $y^2 + 3y + 40 = 0$
    D. $y^2 + 3y + 40 = 0$
    E. $2y^2 + 3y - 40 = 0$
47. The expression of the form $x + 2\ and 3x + 5$ are called
    A. Quadratic expression
    B. Root of the equation
    C. Simultaneous equation
    D. Linear expression
    E. Simple equation
48. A straight line which divides given line into two equal parts and at right angle to the given line is called
    A. Parallel bisector
    B. Transversal bisector
    C. Line of segment
    D. Perpendicular bisector
    E. Triangular bisector
49. Factorise $b^2 - 121$
    A. $(2b - 11)(b + 11)$
    B. $(3b - 11)(b + 11)$

C. $(b-11)(b-11)$
D. $(b+11)(b+11)$
E. $(b-11)(b+11)$

50. Evaluate $(101.5)^2 - (100.5)^2$
A. 1
B. 2.02
C. 20.02
D. 202
E. 2020