

Summative Assessment - Model Paper

Mathematics

(English Version)

Time : 15 Min + 2 hr. 30 min.

Paper-I

Max. Marks : 40

- Instructions :**
1. Read the whole question paper and understand every question thoroughly, without writing any thing. 15 minutes of time is allotted for this.
 2. Answer all the questions.
 3. Write answers to the objective type questions on answer sheet, but at same place.

I. Answer to all the following questions

$7 \times 1 = 7$

Each question carries 1 mark.

1. Determine the value of $\log_{12}^{18} + \log_{12}^8$ (Problem solving)
2. If $A = \{1, 2, 3, 4\}$ and $B = \{2, 4, 6, 8\}$, then find $n(A \cup B)$ (Problem solving).
3. Verify whether -3 and 2 are the zeroes of the polynomial $x^3 - x^2 + x - 6$. (Reasoning Proof).
4. Difference between a two digit number and the number formed by interchanging its digits is 36. Express this data as an algebraic equation. (Communication)
5. Explain the characteristic of a line passing through points $(-5, 2), (0, 2), (3, 2), (5, 2)$. (Communication)
6. Find the roots of $6x^2 - 2x + 5 = 0$. (Problem solving)
7. Prove that $\sqrt{2} + 3$ is an irrational number. (Reasoning Proof)

II. Answer all the following questions. Each question carries 2 marks.

$6 \times 2 = 12$

8. Find the area of a rectangle whose length and breadth are the roots of the quadratic equation $x^2 - 6x + 8 = 0$ (Connection)
9. Mark a point on the second quadrant which is equidistant from coordinate axes. (Representation)
10. If $(3 \times 4 \times 5 \times 7) + (19 \times 21 \times 23)$ a composite number. Justify your answer. (Reasoning Proof)

11. If 6th term of a G.P. is 46875 and its 4th term is 375. Find its 9th term. (Problem solving)
12. Find the points of trisection of the segment joining the points (3, -2) and (-9, 4) (Problem solving)
13. How can you say that the points (1, -5), (3, -2), (7, 4) are collinear ? (Reasoning proof)

III. Every question has internal choice in the following.

Answer to any one alternative. Each question carries 4 marks.

4×4 = 16

14. (a) If 1 and 2 are the zeros of the polynomial find $x^4 - 4x^3 - 15x^2 + 58x - 40$, find other zeroes if any. (Problem solving)

OR

- (b) Find the polynomials whose zeroes are (i) 3, -4 and (ii) $\sqrt{3}$, $\sqrt{3}$
15. (a) Find the sum of all the multiples of 2 or 3 between 100 and 200 (100 and 200 are not included). (Problem solving)

OR

- (b) If the third and sixth terms of a geometric progression are 12 and 96, then find the number of terms in the progression, which are less than 2000.
16. (a) While a helicopter is descending vertically an aviation kit dropped from it. If the height of the helicopter when the kit dropped is 590 m. Find how much time does the kit reach the ground, also find its final velocity before it touches the ground. (Connection)

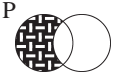
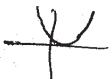
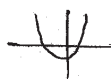
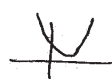

OR

- (b) If Ganesh is 2 years elder to his sister, in how many years does he become a voter ?
17. (a) Neelesh went to market to buy mangoes. He had enough money to buy number of mangoes which are five times the cost of each mango. If the cost of each mango is 2 less, he would have get 12 more mangoes. With this data draw a graph to find the cost of each mango and the number of mangoes. (Visualisation)

OR

- (b) Check whether the following pairs of lines are intersecting, parallel or coincident lines. $3x + 5y + 2 = 0$, $2x - y + 10 = 0$. Mark their solution on the graph.

IV. Choose the correct alternative for the following problems and write your answer A, B, C or D on the answer sheet. Each question carries $\frac{1}{2}$ mark. $10 \times \frac{1}{2} = 5$

18. Standard form of $2^6 \times 5^5$ is (Communication) []
 A) 64×3225 B) 200000 C) 20×10^4 D) 2.0×10^5
19. In the rational form of a terminating decimal number prime factor of the denominator is (Reasoning proof) []
 A) 5 only B) 2 only C) 2 or 5 only D) Any prime
20. Staded Region represented by the vern diagram  (Communication) []
 A) $P \cup Q$ B) $P \cap Q$ C) $P - Q$ D) $Q - P$
21. If 2 is the zero of a polynomial $ax^3 + bx^2 + cx + d$, then the possible value of 'd' will be (Reasoning Proof) []
 A) 1 B) -1 C) 2 D) 0
22. Linear equation is two variable among the following is (Reasoning Proof) []
 A) $(x+1)(y+2) = 0$ B) $(2x+1) \div (y-1) = 0$
 C) $(x-1) + (2y - 5) = 0$ D) $x(y+1) = 0$
23. In a quadratic equation discriminant is zero then the roots are (Communication) []
 A) real B) distinct C) imaginary D) none
24. Graph of a quadratic equation with two distinct roots (Communication) []
 A)  B)  C)  D) 
25. Common difference of an AP is 3. If 2 is added to every term of the progression, then the common difference new AP (Problem solving) []
 A) 5 B) 6 C) 3 D) 2
26. Co-ordinates of a point on X-axis, which is at 5 units away from (2, 0) is (Problem solving)
 A) (-3, 0) B) (7, 0) C) both A and B D) (2, 5) []
27. If slopes of line segments AB and BC are equal then the area of ΔABC is []
 (Reasoning Proof)
 A) Positure B) Zero C) Negative D) Imaginary