MATHEMATICS MOCK TEST

Class: VIII | Set: 18

Time: 1 Hour 30 Minutes | Written Marks: 35 | Viva: 5 | Total: 40 Marks

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. What is the probability of picking a vowel from the word **'MATHEMATICS'**?
2. Find the coordinates of a point that lies on the x-axis at a distance of 5 units to the left of the origin.
3. In a pie chart, if a component represents $\frac{1}{6}$ of the total data, what is its central angle?
4. If the probability of an event happening is 0.35, what is the probability of it NOT happening?
5. Define the term 'Abscissa'.

SECTION B

(2 Marks Each)

6. A die is thrown once. What is the probability of getting a number greater than 4?
7. Plot the points $M(0, 4), N(3, 4)$, and $O(3, 0)$ on a graph. Join them to form a figure and name it.
8. The daily wages of 20 workers are given. Find the range of the data:
   ₹150, ₹210, ₹180, ₹250, ₹300, ₹150, ₹170, ₹180, ₹200, ₹250, ₹300, ₹190, ₹160, ₹210, ₹250, ₹280, ₹150, ₹200, ₹
9. In a pie chart, the central angle for 'Rent' is $90°$. If the total monthly expenditure is ₹$12,000$, find the amount spent on rent.
10. A coin is tossed 200 times and Tails appears 120 times. Find the probability of getting a Head.

SECTION C

(3 Marks Each)

11. A box contains 25 slips numbered 1 to 25. One slip is drawn at random. Find the probability of getting:
    (i) A perfect square number.
    (ii) A multiple of 5.
    (iii) An odd number.

12. Draw a linear graph for the following table showing the cost of apples:

Number of Apples	1	2	3	4	5
Cost (₹)	15	30	45	60	75

From the graph, find the cost of 3.5 apples.

13. Construct a grouped frequency distribution table for the following data with a class width of 5, starting from 0–5:
$3, 12, 18, 24, 7, 10, 5, 21, 2, 8, 14, 19, 23, 29, 15, 6, 11, 4, 17, 20$.

14. A rectangle has three vertices at $A(1, 1), B(6, 1)$, and $C(6, 4)$. Find the coordinates of the fourth vertex D. Also, find the area of the rectangle.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: Performance Analysis
The marks obtained by a student in two consecutive terms are represented by a double bar graph. In Term 1, marks were: English (70), Maths (90), Science (80). In Term 2, marks were: English (75), Maths (95), Science (75).

(i) In which subject did the student show the maximum improvement? (2 Marks)

(ii) Calculate the average marks obtained by the student in Term 2 across these three subjects. (2 Marks)

Case Study 2: The Marbles Game
A jar contains 30 marbles. 10 are Green, 12 are Blue, and the remaining are Red. A child picks one marble without looking.

(i) What is the probability that the marble picked is Red? (2 Marks)

(ii) What is the probability that the marble is either Green or Blue? (2 Marks)

VIVA VOCE

(5 Marks)

- **Probability:** What is the sum of the probabilities of all elementary events in an experiment?
- **Graphs:** What is the difference between a histogram and a pie chart?
- **Coordinates:** If a point lies in the Second Quadrant, what are the signs of its x and y coordinates?
- **Data:** What is 'Raw Data'?
- **Geometry:** How do you find the distance between two points that lie on a horizontal line?