MATHEMATICS MOCK TEST

Class: VIII | Set: 26

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

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. If a die is thrown, what is the probability of getting a number greater than 6?
2. Find the class mark of the class interval $175 - 225$.
3. What are the coordinates of the origin in a Cartesian plane?
4. A pie chart represents 360 units of data. What is the value of a component whose central angle is $1°$?
5. In which quadrant does the point $(-4, 5)$ lie?

SECTION B

(2 Marks Each)

6. A box contains cards numbered 1 to 10. One card is drawn at random. Find the probability of getting a prime number.
7. Plot the points $A(3, 0), B(3, 3),$ and $C(0, 3)$ on a graph sheet. Join OA, AB, BC and CO. Name the figure formed.
8. The weights (in kg) of 8 children are: 15, 22, 18, 20, 15, 25, 15, 20. Find the range and mode.
9. In a pie chart, the central angle for 'Electronics' is $72°$. If the total sales are ₹50,000, find the sales of Electronics.
10. Verify Euler's formula for a Triangular Prism ($F = 5, V = 6, E = 9$).

SECTION C

(3 Marks Each)

11. **Graph Interpretation (Histogram Analysis):**
The following frequency table describes a histogram representing the ages of 60 teachers in a school.

Age Group (Years)	25–30	30–35	35–40	40–45	45–50
No. of Teachers	10	15	20	10	5

Answer the following questions:

(i) How many teachers are below 35 years of age?

(ii) Which age group has the maximum number of teachers?

(iii) How many teachers are 40 years or older?

12. A bag contains 4 red, 5 black, and 6 white balls. One ball is drawn at random. Find the probability of getting:

(i) A black ball.

(ii) Not a white ball.

(iii) Either a red or a white ball.

13. Linear Graph Drawing:
Draw a linear graph for the following table showing the Simple Interest on ₹1000 for different periods at 10% per annum:

Time (Years)	1	2	3	4	5
S.I. (₹)	100	200	300	400	500

From your graph, find the interest for 2.5 years.

14. The following data represents the monthly expenditure of a family on various items. Calculate the central angles for a Pie Chart:
Food: ₹4800, Rent: ₹3000, Education: ₹2400, Savings: ₹1800. (Total = ₹12,000).

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The Commuter's Line Graph
An office worker tracks the distance traveled from home to office in a car. The following table represents the data from a linear graph:

Time (mins)	0	10	20	30	40	50
Distance (km)	0	8	15	15	22	30

(i) During which 10-minute interval was the car stationary (stuck in traffic)? (2 Marks)

(ii) Find the total distance covered in the first 20 minutes and the total distance covered in the last 10 minutes. (2 Marks)

Case Study 2: Performance Evaluation
A school of 1000 students conducted a survey on students' favorite activities. The data is as follows: Sports (400), Music (250), Art (200), and Reading (150).

(i) If a student is picked at random, what is the probability that the student likes either Music or Art? (2 Marks)

(ii) Find the central angle for the 'Sports' sector if this data were represented on a Pie Chart. (2 Marks)

VIVA VOCE **(5 Marks)**

- **Data Handling:** What is the difference between a Bar Graph and a Histogram regarding the spacing of bars?
- **Probability:** What is the sum of the probabilities of all possible outcomes of an experiment?
- **Coordinate Geometry:** What are the coordinates of a point on the y-axis?
- **Graphs:** When do we use a ”kink” or ”broken line” on the x-axis?
- **Pie Charts:** How do you find the central angle if the frequency is given?