MATHEMATICS MOCK TEST

Class: VIII | Set: 25

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

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. A point has coordinates $(0, 5)$. On which axis does this point lie?
2. What is the probability of an event which is certain to happen?
3. Find the class mark of the interval $250 - 350$.
4. If the central angle of a sector in a pie chart is 120°, what fraction of the whole circle does it cover?
5. In a linear graph, what is the y-coordinate of any point on the x-axis?

SECTION B

(2 Marks Each)

6. A die is thrown. Find the probability of getting a number greater than 4.
7. The following table shows the marks of 5 students. Find the range of the data:
   Marks: 45, 82, 36, 95, 60.
8. Plot the points $A(2, 1), B(6, 1)$, and $C(4, 5)$ on a graph sheet. What type of triangle is formed by joining ABC?
9. In a pie chart, the central angle for 'Transport' is 45°. If the total expenditure is ₹8000, find the amount spent on transport.
10. Verify Euler's formula for a Pentagonal Pyramid (Faces = 6, Vertices = 6, Edges = 10).

SECTION C

(3 Marks Each)

11. **Graph Interpretation (Histogram):**
    The following table represents a histogram of the heights of 50 students in a class.

Height (cm)	140–145	145–150	150–155	155–160	160–165
No. of Students	6	12	18	10	4

    Answer the following:

    (i) How many students have a height of 155 cm or more?

(ii) Which class interval has the maximum frequency?

(iii) What is the class size?

12. A box contains 25 cards numbered 1 to 25. A card is drawn at random. Find the probability of getting:

(i) A multiple of 5.

(ii) A perfect square number.

(iii) A prime number.

13. Draw a linear graph for the relationship between the side of a square and its perimeter:

Side (cm)	1	2	3	4	5
Perimeter (cm)	4	8	12	16	20

Use the graph to find the perimeter when the side is 3.5 cm.

14. Find the area of a rhombus whose side is 5 cm and altitude is 4.8 cm. If one of its diagonals is 8 cm, find the length of the other diagonal.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The Courier Journey Graph

The following line graph represents the distance covered by a delivery boy over 5 hours.

Time	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM
Distance (km)	0	15	30	30	45	60

(i) During which time interval was the delivery boy taking a break (distance did not change)? (2 Marks)

(ii) What was the average speed of the delivery boy between 8 AM and 10 AM? (2 Marks)

Case Study 2: School Stationery Survey

A school surveyed 360 students to find their favorite brand of pens. The data is as follows: Brand A (120), Brand B (90), Brand C (100), and others.

(i) If a student is picked at random, what is the probability that they prefer Brand B? (2 Marks)

(ii) Calculate the central angle for Brand A if this data is to be represented in a Pie Chart. (2 Marks)

VIVA VOCE **(5 Marks)**

- **Graphs:** What is a ”broken line” (kink) and when is it used on the x-axis?
- **Probability:** What is the sum of the probabilities of all outcomes of an experiment?
- **Coordinates:** What are the coordinates of the origin?
- **Pie Chart:** How is the central angle calculated from frequency?
- **Data Handling:** What is the difference between a Bar Graph and a Histogram?