MATHEMATICS MOCK TEST

Class: VIII | Set: 30

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 choosing a prime number from a die thrown once?
2. Find the class mark of the class interval $150 - 200$.
3. If a point lies on the x-axis, what is its y-coordinate?
4. In a pie chart, a component covers $\frac{1}{5}$ of the total area. Find its central angle.
5. In which quadrant does the point $(-3, -6)$ lie?

SECTION B

(2 Marks Each)

6. A bag has 5 red and 7 green balls. One ball is drawn at random. Find the probability of getting a red ball.
7. Plot the points $P(1, 1), Q(5, 1)$, and $R(3, 4)$ on a graph sheet. Join them to form a triangle and name the type of triangle.
8. The following data represents the runs scored by a batsman in 5 matches: 45, 0, 78, 102, 35. Find the range of the runs.
9. In a pie chart, the central angle for 'Savings' is 54°. What percentage of the total income is saved?
10. Find the coordinates of the vertices of a square with side 3 units, where one vertex is at $(0, 0)$ and the square lies in the fourth quadrant.

SECTION C

(3 Marks Each)

11. **Histogram Construction:** Construct a histogram for the following frequency distribution of daily wages (in ₹) of 50 workers:

Daily Wages (₹)	200–250	250–300	300–350	350–400	400–450
No. of Workers	8	12	15	10	5

12. A box contains 30 slips numbered 1 to 30. One slip is drawn at random. Find the probability of getting:

(i) A multiple of 7.
(ii) A number which is a perfect square.
(iii) A number divisible by 10.

13. Linear Graph: Draw a linear graph for the following data showing the side of an equilateral triangle and its perimeter:

Side (cm)	2	3	4	5	6
Perimeter (cm)	6	9	12	15	18

From the graph, find the perimeter if the side is 3.5 cm.

14. Find the area of a rhombus whose side is 6 cm and altitude is 4.5 cm. If one of its diagonals is 9 cm, find the length of the other diagonal.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The Delivery Route
A courier boy travels on a bicycle to deliver a parcel. The following data from his distance-time graph is recorded:

Time (mins)	0	10	20	30	40	50
Distance (km)	0	3	6	6	9	12

(i) During which time interval was the courier boy resting? Explain using coordinates. (2 Marks)
(ii) Calculate the total distance covered and find the average speed for the entire journey in km/min. (2 Marks)

Case Study 2: The School Canteen Survey
A school surveyed 1200 students about their favorite snack. The results are shown in a Pie Chart: Pizza (central angle 150°), Burger (90°), Sandwich (60°), and others.

(i) How many students chose Sandwich as their favorite snack? (2 Marks)
(ii) If a student is picked at random, what is the probability that the student likes either Pizza or Burger? (2 Marks)

VIVA VOCE

(5 Marks)

- **Probability:** What is the range of values for the probability of any event?
- **Graphs:** What is the difference between an independent variable and a dependent variable in a linear graph?
- **Coordinates:** If a point has a negative x-coordinate and a positive y-coordinate, in which quadrant is it located?
- **Pie Chart:** How do you find the central angle of a component if its percentage is given?
- **Data Handling:** What is the significance of the height of a bar in a histogram?