
MATHEMATICS MOCK TEST

Class: VIII | Set: 21

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

NAME: _____

ROLL NO: _____

SECTION A

(1 Mark Each)

1. If a coin is tossed twice, what is the probability of getting two heads?
2. What is the y -coordinate of any point that lies on the x -axis?
3. Find the class mark of the class interval $45 - 55$.
4. A pie chart shows that 40% of a class likes Sports. What is the central angle for this sector?
5. In which quadrant does the point $(-4, 6)$ lie?

SECTION B

(2 Marks Each)

6. A die is thrown. Find the probability of getting a number greater than or equal to 3.
7. Plot the following points on a graph: $L(1, 1)$, $M(5, 1)$, $N(5, 4)$. Join them and identify the figure.
8. The marks of 10 students are: 25, 30, 25, 40, 30, 25, 45, 30, 25, 50. Find the mode and range of this data.
9. Write the coordinates of the vertices of a square of side 5 units, where one vertex is at the origin $(0, 0)$ and the sides are parallel to the axes (First Quadrant).
10. In a survey of 200 people, 40 prefer tea. If one person is chosen at random, find the probability that the person does NOT prefer tea.

SECTION C

(3 Marks Each)

11. **Histogram Construction:** Construct a histogram for the following frequency distribution table showing the heights of 40 plants:

Height (cm)	0-5	5-10	10-15	15-20	20-25
No. of Plants	4	10	14	8	4

12. A box contains 15 cards numbered 1 to 15. One card is drawn at random. Find the probability of getting:

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- (i) A prime number.
(ii) A number which is a multiple of 4.
(iii) A number less than 1.

13. Draw a linear graph for the following data showing the side of a square and its perimeter:

Side (cm)	2	3	4	5	6
Perimeter (cm)	8	12	16	20	24

From the graph, find the perimeter when the side is 4.5 cm.

14. The following table shows the time spent by a child in different activities in a day. Calculate the central angles for a Pie Chart:
Sleep: 8 hours, School: 6 hours, Homework: 4 hours, Play: 3 hours, Others: 3 hours.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The Courier Service Analysis

A courier service company tracks the distance (in km) traveled by its delivery executive over a period of 6 hours. *Time 9 AM: 0 km | 10 AM: 20 km | 11 AM: 20 km | 12 PM: 35 km | 1 PM: 50 km | 2 PM: 65 km.*

- (i) During which one-hour interval was the executive at rest (did not travel)? (2 Marks)
(ii) Find the total distance covered between 10 AM and 1 PM. (2 Marks)

Case Study 2: The School Library Survey

A librarian conducted a survey of 720 students to find out their favorite book category. The results are: Adventure (central angle 120°), Comics (90°), Science Fiction (100°), and others.

- (i) How many students chose Adventure as their favorite category? (2 Marks)
(ii) Find the probability that a student chosen at random likes Comics. (2 Marks)

VIVA VOCE

(5 Marks)

- **Data Handling:** What is a 'frequency polygon' and how is it related to a histogram?
- **Probability:** What is the sum of probabilities of all possible outcomes in an experiment?
- **Coordinate Geometry:** What are the signs of coordinates in the Fourth Quadrant?
- **Graphs:** Can a point lie on both axes at the same time? If yes, name the point.
- **Pie Charts:** Why is the total of all central angles always 360° ?