
MATHEMATICS MOCK TEST

Class: VIII | Set: 23

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 an impossible event?
2. Write the coordinates of the origin.
3. Find the class mark of the class interval 160 – 180.
4. If the central angle of a component in a pie chart is 90° , what fraction of the total data does it represent?
5. In which quadrant does the point $(4, -3)$ lie?

SECTION B

(2 Marks Each)

6. A die is thrown once. Find the probability of getting a number less than 4.
7. Plot the points $A(2, 3)$ and $B(2, 6)$ on a graph sheet. What is the distance between these two points?
8. The ages (in years) of 8 teachers are: 32, 41, 28, 54, 35, 26, 33, 38. Find the range of their ages.
9. In a pie chart, the central angle for 'Education' is 72° . If the total expenditure is ₹15,000, find the amount spent on education.
10. A coin is tossed 50 times and Heads appears 28 times. Find the probability of getting a Tail.

SECTION C

(3 Marks Each)

11. **Histogram Construction:** Construct a histogram for the following frequency distribution of marks obtained by 40 students:

Marks	0-20	20-40	40-60	60-80	80-100
No. of Students	4	10	12	8	6

12. A bag contains 5 red, 6 white, and 4 green balls. One ball is drawn at random. Find the probability that it is:

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- (i) A white ball.
(ii) Not a red ball.
(iii) Either a red or a green ball.

13. Draw a linear graph for the following data showing the number of units of a commodity and its total cost:

No. of Units	1	2	3	4	5
Cost (₹)	25	50	75	100	125

From the graph, find the cost of 3.5 units.

14. The following data shows the favorite colors of 200 students. Calculate the central angles to represent this in a Pie Chart:

Red: 80, Blue: 60, Green: 40, Yellow: 20.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: Temperature Monitoring

The following line graph shows the temperature of a city recorded at different times on a winter day: 6 AM: 4°C | 9 AM: 10°C | 12 PM: 18°C | 3 PM: 16°C | 6 PM: 8°C.

- (i) During which three-hour interval was the increase in temperature the maximum? (2 Marks)
(ii) What was the temperature at 10:30 AM (assuming a linear change between 9 AM and 12 PM)? (2 Marks)

Case Study 2: The Lucky Draw Contest

In a school fair, a box contains 100 slips numbered 1 to 100. A student picks one slip for a lucky draw.

- (i) What is the probability that the number on the slip is a perfect cube? (2 Marks)
(ii) What is the probability that the number on the slip is a two-digit number? (2 Marks)

VIVA VOCE

(5 Marks)

- **Data Handling:** What is the difference between the upper limit and lower limit of a class interval called?
- **Probability:** Can the probability of an event be 1.5? Why or why not?
- **Coordinate Geometry:** What are the signs of coordinates for a point in the Third Quadrant?
- **Graphs:** What does the x -axis represent in a distance-time graph?
- **Pie Charts:** If 50% of the data is represented by one sector, what is its central angle?