MATHEMATICS MOCK TEST

Class: VIII | Set: 19

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 an even prime number?
2. Find the class mark of the class interval $150 - 170$.
3. In which quadrant does the point $(-5, -2)$ lie?
4. What is the central angle of a component that represents $\frac{1}{4}$ of the total data in a pie chart?
5. The y-coordinate of a point is also known as the _____.

SECTION B

(2 Marks Each)

6. A bag contains 3 red, 4 blue, and 5 green marbles. One marble is drawn at random. Find the probability that it is NOT green.
7. Construct a grouped frequency distribution table for the following data using class intervals $0 - 10, 10 - 20$ etc.:
   $5, 12, 28, 15, 35, 42, 19, 10, 22, 30, 45, 8, 17, 25$.
8. Find the coordinates of the vertices of a rectangle whose length is 6 units and breadth is 4 units, with one vertex at the origin $(0, 0)$ and the length along the x-axis (First Quadrant).
9. In a pie chart, the central angle for 'Food' is 108°. What percentage of the total expenditure is spent on food?
10. Plot the points $A(2, 0), B(2, 3)$, and $C(0, 3)$ on a graph. Find the coordinates of point D such that $ABCD$ is a square.

SECTION C

(3 Marks Each)

11. **Histogram Construction:** Draw a histogram for the following frequency distribution of weights of 40 students:

Weight (kg)	30–35	35–40	40–45	45–50	50–55
No. of Students	6	12	10	8	4

12. A spinner has numbers 1 to 8. If it is spun once, find the probability of:

(i) Getting a number greater than 5.

(ii) Getting a perfect square number.

(iii) Getting a factor of 8.

13. Draw a linear graph for the following data showing the Simple Interest on a principal of ₹1000 for different years:

Time (Years)	1	2	3	4	5
Interest (₹)	80	160	240	320	400

From the graph, find the interest for 2.5 years.

14. The following data shows the favorite sports of 240 students. Calculate the central angles to represent this in a Pie Chart:
Cricket: 90, Football: 60, Tennis: 40, Badminton: 50.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The Health Check-up
The following line graph shows the height (in cm) of a child recorded every year from age 5 to 9: *Age 5: 110 cm | Age 6: 115 cm | Age 7: 125 cm | Age 8: 130 cm | Age 9: 140 cm.*

(i) Between which two consecutive years was the increase in height the maximum? (2 Marks)

(ii) What was the child's height at age 7.5 years? (Assume a linear growth between age 7 and 8). (2 Marks)

Case Study 2: The Deck of Cards
From a well-shuffled deck of 52 playing cards, one card is drawn at random.

(i) What is the probability that the drawn card is a 'Red King'? (2 Marks)

(ii) What is the probability that the drawn card is a 'Face Card' (Jacks, Queens, Kings)? (2 Marks)

VIVA VOCE

(5 Marks)

- **Data Handling:** Why is there no gap between bars in a histogram?
- **Probability:** If an event is certain to happen, what is its probability value?
- **Coordinate Geometry:** If a point lies on the y-axis, what is its x-coordinate?
- **Pie Chart:** What is the total sum of all central angles?
- **Graphs:** When do we use a "kink" or "broken line" on an axis?