MATHEMATICS MOCK TEST

Class: VIII | Set: 17

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

NAME: _____   ROLL NO: _____

SECTION A   (1 Mark Each)

1. Find the probability of getting a vowel from the word **'PROBABILITY'**.

2. What is the x-coordinate of any point lying on the y-axis?

3. If the central angle of a component in a pie chart is $72°$, what percentage of the total does it represent?

4. What is the probability of a sure event?

5. State the quadrant in which the point $(4, -6)$ lies.

SECTION B   (2 Marks Each)

6. A bag has 4 red and 2 yellow balls. A ball is drawn at random. What is the probability of getting a red ball?

7. Find the coordinates of the points which are at a distance of 3 units from the x-axis and 4 units from the y-axis in the third quadrant.

8. The marks of a student in 5 subjects are given. If the total marks are 450, find the central angle for a subject in which the student scored 90 marks.

9. Plot the points $P(1,1), Q(4,1), R(4,4)$ and $S(1,4)$ on a graph. Name the figure formed by joining them.

10. A coin is tossed 100 times and head appears 45 times. Find the probability of getting a tail.

SECTION C   (3 Marks Each)

11. Numbers 1 to 20 are written on ten separate slips (one number on one slip), kept in a box and mixed well. One slip is chosen from the box without looking into it. What is the probability of:

    (i) Getting a number less than 6.
    (ii) Getting a 1-digit number.
    (iii) Getting a prime number.

12. The following data gives the marks scored by 30 students in a test. Construct a grouped frequency distribution table with class intervals 0–10, 10–20, etc.
Data: 7, 21, 15, 3, 12, 18, 24, 29, 8, 14, 16, 22, 10, 5, 19, 25, 27, 13, 11, 4, 17, 20, 23, 28, 9, 6, 12, 15, 21, 10.

13. Draw a linear graph for the distance-time data of a moving car:

Time (Hours)	1	2	3	4	5
Distance (km)	40	80	120	160	200

14. In a Cartesian plane, a rectangle has three vertices at $(0,0), (5,0),$ and $(0,3)$. Find the coordinates of the fourth vertex.

SECTION D $\qquad$ (4 Marks Each - Case Study)

Case Study 1: Patient Temperature Record
The following line graph shows the temperature of a patient in a hospital, recorded every hour.

- At 1 PM: $36.5°$C | 2 PM: $38.5°$C | 3 PM: $39°$C | 4 PM: $38°$C.

(i) During which period did the patient's temperature show the highest upward trend? (2 Marks)

(ii) What was the patient's temperature at 2:30 PM (assuming a linear change between 2 PM and 3 PM)? (2 Marks)

Case Study 2: Survey on Reading Habits
A survey was conducted with 200 people about their favorite book genre. The data is as follows: Fiction (80), Non-Fiction (60), Mystery (40), and Others (20).

(i) If a person is chosen at random, what is the probability that they like Mystery or Others? (2 Marks)

(ii) Calculate the central angle for the 'Fiction' group if this data were to be represented on a Pie Chart. (2 Marks)

VIVA VOCE $\qquad$ (5 Marks)

- **Data Handling:** What is the difference between a Bar Graph and a Histogram?

- **Pie Chart:** What is the sum of all central angles in a pie chart?

- **Coordinate Geometry:** What are the coordinates of the origin?

- **Probability:** Can the probability of an event be greater than 1 or negative? Why?

- **Graphs:** When do we use a broken line (zigzag line) on the x-axis of a graph?