
MATHEMATICS MOCK TEST

Class: VIII | Set: 18

Time: 2 Hours | Written Marks: 35 | Viva: 5 | Total: 40 Marks

NAME: _____

ROLL NO: _____

SECTION A

(1 Mark Each)

1. A die is rolled once. What is the probability of getting an odd number?
2. What is the class-size of the class interval $20 - 30$?
3. Fill in the blank: Every point on a circle is _____ from its centre.
4. Find the area of a rectangle having length = 20 m and breadth = 15 m.
5. Find the volume of the cylinder in which height = 42 cm and base radius = 10 cm.

SECTION B

(2 Marks Each)

6. Construct a rhombus $ABCD$ in which diagonal $AC = 5.8$ cm and diagonal $BD = 6.4$ cm.
7. A letter is chosen at random from the letters of the word **EXAMINATION**. What is the probability that it is a vowel?
8. Find the area of a rhombus whose perimeter is 48 cm and altitude is 8.5 cm.
9. A rectangular sand box is of dimensions 5 cm \times 4 cm \times 3 cm. Find the volume of sand in it.
10. Arrange the following data in ascending order: 5.7, 9.2, 3.1, 4.6, 1.8, 10.4, 2.5, 0.9, 1.2.

SECTION C

(3 Marks Each)

11. Construct a parallelogram $PQRS$ in which $QR = 4.7$ cm, $\angle Q = 120^\circ$ and $PQ = 2.8$ cm.
12. The area of a square is 81 cm². Find its perimeter and the length of its diagonal.
13. A card is drawn from a well-shuffled pack of 52 cards. Find the probability that the card drawn is: (i) a black king, (ii) a jack, (iii) a spade.
14. Prepare a frequency table for the following data representing weights (in kg) of 30 students, taking class-intervals $30 - 35$, $35 - 40$, etc.:
48, 55, 30, 43, 41, 36, 48, 37, 34, 38, 46, 42, 38, 52, 37, 34, 40, 42, 50, 37, 35, 46, 42, 45, 43, 37, 39, 45, 48, 46.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: Analysis of Teacher Ages (Histogram)

The following data represents the distribution of ages (in years) of 38 teachers in a school:

Age Group	20-25	25-30	30-35	35-40	40-45
No. of Teachers	4	10	12	8	4

- In what age group is the maximum number of teachers and what is their number? (2 Marks)
- How many teachers are of the age 35 or more? (2 Marks)

Case Study 2: The School Canteen Project

A publisher is spending money on various items: Paper (25%), Printing (12%), Binding (6%), Publicity (8%), Royalty (9%), and the rest on miscellaneous.

- If this data is represented by a pie-chart, calculate the central angle for the 'Paper' and 'Printing' components. (2 Marks)
- If the total money spent is ₹1,00,000, find the difference between the money spent on 'Paper' and 'Royalty'. (2 Marks)

VIVA VOCE

(5 Marks)

- **Statistics:** What is the difference between the Lower Limit and Upper Limit of a class interval?
- **Probability:** In a box of 100 electric bulbs, 8 are defective. What is the probability of picking a non-defective bulb?
- **Mensuration:** Find the perimeter of a semi-circle whose radius is 35 cm.
- **Circles:** State whether True or False: "Every circle has a unique centre."
- **Solids:** Find the surface area of a cube whose volume is 343 cm^3 .