
MATHEMATICS MOCK TEST

Class: VIII | Set: 28

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. If the upper and lower limits of a class interval are 18 and 11 respectively, then write the class-interval.
3. Fill in the blank: The perimeter of a circle is called its _____.
4. Find the area of a square each of whose sides measures 8.5 m.
5. The volume of a cube is 343 cm^3 . Find its surface area.

SECTION B

(2 Marks Each)

6. Construct a rhombus $ABCD$ in which diagonal $AC = 5.8 \text{ cm}$ and diagonal $BD = 6.4 \text{ cm}$ using a ruler and compasses.
7. 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 spade.
8. The area of a rectangle is 19.6 m^2 and its length is 5.6 m . Find its perimeter.
9. The total surface area of a solid cylinder is 462 cm^2 and its curved surface area is one-third of its total surface area. Find the radius of the base of the cylinder.
10. Construct a frequency table for the following data representing heights of students: 152, 165, 172, 144, 135, 156, 175, 140, 132, 150, 153, 147.

SECTION C

(3 Marks Each)

11. Construct a quadrilateral $ABCD$ in which $AB = 5.2 \text{ cm}$, $BC = 3.6 \text{ cm}$, $\angle A = 60^\circ$, $\angle B = 90^\circ$ and $\angle C = 120^\circ$.
12. In a circle of radius 4.5 cm , a chord AB of length 5.4 cm is drawn. Indicate by marking points X and Y , the minor arc AXB and the major arc AYB of the circle. Also, shade the major segment.
13. Find the area of an octagon $ABCDEFGH$ having each side equal to 5 cm , $HC = 11 \text{ cm}$ and $AP \perp HC$ such that $AP = 4 \text{ cm}$.

14. Represent the following data by a histogram:

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Students	2	3	14	10	6	5	8	2

SECTION D

(4 Marks Each - Case Study)

Case Study 1: Factory Wage Analysis

The management of a factory is analyzing the monthly wages of its workers. The following data is extracted from the factory records:

Wage Group (₹)	8000-9000	9000-10000	10000-11000	11000-12000	12000-13000
No. of Workers	5	12	25	18	10

- In which wage-group is the largest number of workers kept and what is their number? Also, find the class size of the intervals. (2 Marks)
- What is the total number of workers in the factory? Calculate the class mark of the third interval (10000 – 11000). (2 Marks)

Case Study 2: Number Game Probability

19 cards numbered 1, 2, 3, ..., 19 are put in a box and mixed thoroughly. One card is chosen at random from the box.

- What is the probability that the number on the chosen card is a composite number less than 10? (2 Marks)
- What is the probability that the number on the chosen card is neither divisible by 3 nor by 5? (2 Marks)

VIVA VOCE

(5 Marks)

- **Probability:** What is the probability of a vowel being chosen from the word **EXAMINATION**?
- **Statistics:** Define the "Class Mark" of a class interval.
- **Circles:** One and only one tangent can be drawn to pass through a point on the circle. Is this statement True or False?
- **Mensuration:** If the length, breadth, and height of a cuboid are 2 m, 2 m, and 1 m, what is its surface area?
- **Solids:** What is the relationship between the base radius and diameter of a cylinder?