MATHEMATICS MOCK TEST

Class: VIII | Set: 17

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

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. Name the longest chord of a circle.
2. What is the lower limit of the class interval $14 - 22$?
3. A coin is tossed once. What is the probability of getting a head?
4. Find the area of a rectangle having length $= 15$ cm and breadth $= 8$ cm.
5. The volume of a cube is 216 cm^3. Find its total surface area.

SECTION B

(2 Marks Each)

6. Construct a square of side 4.8 cm using a ruler and compasses.
7. Construct a frequency table for the following data: $3, 2, 5, 4, 1, 3, 2, 5, 3, 1, 2, 1, 2, 2, 3, 4, 5, 3, 1, 2, 3$.
8. The volume of a cuboid is 972 m^3. If its length and breadth be 16 m and 13.5 m respectively, find its height.
9. A die is rolled once. What is the probability of getting a multiple of 3?
10. Find the area of a rhombus whose diagonals are 16 cm and 24 cm.

SECTION C

(3 Marks Each)

11. Construct a parallelogram $ABCD$ in which $BC = 6$ cm, $CD = 4$ cm and $\angle C = 60^\circ$.
12. Find the length of the tangent drawn to a circle of radius 12 cm from a point distant 23 cm from the centre.
13. The lengths of parallel sides of a trapezium are in the ratio $7 : 5$ and the distance between them is 14 cm. If the area of the trapezium is 252 cm^2, find the lengths of its parallel sides.
14. Three cubes of metal with edges 5 cm, 4 cm and 3 cm respectively are melted to form a single cube. Find the lateral surface area of the new cube.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The Wall Construction Project
A wall of length 13.5 m, width 60 cm and height 1.6 m is to be constructed using bricks, each of dimensions 22.5 cm $\times$ 12 cm $\times$ 8 cm.

(i) Find the volume of the wall in cubic centimetres. (2 Marks)

(ii) How many bricks will be needed to complete the construction of this wall? (2 Marks)

Case Study 2: Rahul's Academic Performance (Pie Chart)
The marks obtained by Rahul in five subjects are: English (120), Hindi (90), Mathematics (75), Science (105), and Social Studies (150).

(i) Calculate the central angle for the 'English' and 'Mathematics' components to represent this data on a pie chart. (2 Marks)

(ii) If Rahul's Social Studies marks are chosen at random from his total marks, what is the probability (as a fraction) that these are the marks he obtained in Social Studies? (2 Marks)

VIVA VOCE

(5 Marks)

- **Circles:** What is the perimeter of a circle called?
- **Probability:** What is the probability of getting a number less than 5 when a die is rolled?
- **Statistics:** What is the class-size of the class interval $20 - 30$?
- **Solids:** Find the surface area of a cube if its length, breadth, and height are 2 m, 2 m, and 1 m respectively.
- **Mensuration:** How many cubic centimetres (cm^3) make one Litre?