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# MATHEMATICS MOCK TEST

Class: VIII | Set: 16

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

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NAME: \_\_\_\_\_

ROLL NO: \_\_\_\_\_

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## SECTION A

(1 Mark Each)

1. A coin is tossed once. What is the probability of getting a head?
2. What is the lower limit of the class interval  $14 - 22$ ?
3. State whether the following is True or False: "Each radius of a circle is also a chord of the circle."
4. Find the length of the diagonal of a rectangle with length 15 cm and breadth 8 cm.
5. If the volume of a cube is  $216 \text{ cm}^3$ , find its total surface area.

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## SECTION B

(2 Marks Each)

6. Construct a square of side 4.8 cm using a ruler and compasses.
7. A die is rolled once. Find the probability of getting a multiple of 3.
8. The volume of a cuboid is  $972 \text{ m}^3$ . If its length and breadth be 16 m and 13.5 m respectively, find its height.
9. Find the length of the tangent drawn to a circle of radius 12 cm from a point distant 23 cm from the centre.
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.

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## SECTION C

(3 Marks Each)

11. Construct a parallelogram  $ABCD$  in which  $BC = 6 \text{ cm}$ ,  $CD = 4 \text{ cm}$  and  $\angle C = 60^\circ$ .
12. 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.
13. A letter is chosen at random from the letters of the word **EXAMINATION**. What is the probability that it is a vowel?
14. Find the area of a trapezium whose parallel sides are 23.7 cm and 16.3 cm and the distance between them is 11.4 cm.

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## SECTION D

(4 Marks Each - Case Study)

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### Case Study 1: Zoo Management and Data

There are 900 creatures in a zoo. The administration classifies them into: Beast animals (120), Other land animals (400), Birds (170), Water animals (135) and Reptiles (75).

- (i) Calculate the central angle for the 'Beast animals' and 'Other land animals' components if this data is represented by a pie-chart. (2 Marks)
- (ii) If a visitor approaches a random enclosure, what is the probability that it contains either a 'Bird' or a 'Water animal'? (2 Marks)

### Case Study 2: Renovating the School Verandah

A school verandah 50 m long and 12 m broad is to be paved with rectangular tiles, each measuring 6 dm  $\times$  5 dm.

- (i) Find the area of the verandah in square metres. (2 Marks)
- (ii) Find the total number of tiles needed to cover the entire verandah. (10 dm = 1 m). (2 Marks)

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## VIVA VOCE

(5 Marks)

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- **Circles:** What is the difference between a 'Secant' and a 'Chord'?
- **Probability:** What is the probability of an impossible event?
- **Statistics:** Define 'Class Size' and how is it calculated from a class interval?
- **Mensuration:** How many cubic centimetres (cm<sup>3</sup>) make 1 Litre?
- **Solids:** What is the formula for the Total Surface Area of a cylinder?