MATHEMATICS MOCK TEST

Class: VI | Set: 04

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

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. Check if $5,283$ is divisible by 9 using the divisibility rule.
2. Represent 2.5 on a number line.
3. Write the decimal 0.007 in words.
4. Name the longest chord of a circle.
5. In a bar graph, what is represented by the length of the bars?

SECTION B

(2 Marks Each)

6. How many palindromic times are there between 2 o'clock and 3 o'clock?
7. Express 0.04 as a fraction in its simplest form.
8. Draw a circle of radius 4.5 cm using a compass.
9. The scores of 20 students in a test are: $5, 6, 7, 5, 8, 9, 6, 7, 5, 5, 8, 7, 6, 5, 9, 8, 7, 6, 5, 8$. Prepare a frequency distribution table using Tally Marks.
10. Subtract 0.314 kg from 2.107 kg.

SECTION C

(3 Marks Each)

11. There are 55 seeds in 8 fruits of a plant. If we assume the number of seeds is almost equal in each fruit, then estimate the number of seeds in each fruit.
12. A wire is cut into three pieces of lengths 2.5 m, 3.75 m, and 1.2 m. What was the original total length of the wire?
13. Draw a line segment $\overline{PQ} = 8$ cm. Take a point R on it. Construct a perpendicular to PQ at point R using a ruler and compasses.
14. The following table shows the number of families having different numbers of children in a locality:

No. of Children	0	1	2	3 or more
No. of Families	5	15	25	10

Represent the above data using a Bar Graph.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The Supercell Pattern
In a "Number Play" game, students are analyzing rows of cells. A "supercell" is a cell whose value follows a specific pattern relative to its neighbors.

(i) Find the number of supercells in the following row of cells:
8010, 2367, 942, 1163, 125, 3418, 3814, 3184, 3481. (2 Marks)

(ii) Is it possible to fill a grid with all distinct numbers such that there are no supercells? Justify your answer. (2 Marks)

Case Study 2: Construction Challenge
A student is asked to construct a geometric angle of 90° without using a protractor.

(i) Describe the steps or draw the construction to create a 90° angle using only a ruler and compass. (2 Marks)

(ii) If this 90° angle is bisected, what will be the measure of each new angle? (2 Marks)

VIVA VOCE

(5 Marks)

- **Number Play:** After how many iterations starting with 3814 do we arrive at Kaprekar's constant?
- **Decimals:** How do you convert 0.5 into a fraction?
- **Construction:** What is the use of a Divider in a geometry box?
- **Data Handling:** What is the difference between a Pictograph and a Bar Graph?
- **Logic:** If a number is divisible by both 2 and 3, which other number is it definitely divisible by?