Chapter- 9

Tests of divisibility

STUDY NOTES

LEARN ABOUT:

- **EVEN AND ODD NUMBERS**
- **TESTS OF DIVISIBILITY RULES**

- **EVEN NUMBERS –**

  Numbers having 2, 4, 6, 8 and 0 as their one's digit are known as even numbers.
  EXAMPLE- 78, 120, 438, 1744, 1800 etc.

- **ODD NUMBERS –**

  Numbers having 1, 3, 5, 7 and 9 as their one's digit are known as odd numbers.
  EXAMPLE- 47, 139, 665, 2481 etc.

- **TESTS OF DIVISIBILITY RULES –**

DIVISIBILITY BY 2: A number is divisible by 2 if its last digit is an even number or zero; e.g. 24, 92, 178, 2480, 9000 etc.

DIVISIBILITY BY 4: A number is divisible by 4 if the number formed by its last two digits is divisible by 4 or if the last two digits are both zeroes, e.g. 116, 300, 2148, 6100 etc.

DIVISIBILITY BY 3: A number is divisible by 3 if the sum of its digits is divisible by 3.
e.g. 18 = 1 + 8 = 9 (divisible by 3)
243 = 2 + 4 + 3 = 9 (divisible by 3)
6472 = 6 + 7 + 4 + 2 = 19 (not divisible by 3)

DIVISIBILITY BY 6: A number is divisible by 6 if it is divisible by 2 and 3 i.e its last digit (one's digit) must be an even number and the sum of its digits must be divisible by 3. e.g. 84, 264, 2142 etc.

DIVISIBILITY BY 5: A number is divisible by 5 if its last digit (one's digit) is either zero or 5, e.g. 60, 200, 455, 1045 etc.

DIVISIBILITY BY 9: A number is divisible by 9 if the sum of its digits is divisible by 9.
e.g. 4158 = 4 + 1 + 5 + 8 = 18 (divisible by 9)
8464 = 8 + 4 + 6 + 4 = 22 (not divisible by 9)

DIVISIBILITY BY 10: A number is divisible by 10 if its last digit (one's digit) is zero, e.g. 90, 180, 3700, 58120 etc.

EXAMPLE-

Check the divisibility of the following numbers.

(i) 7122 by 3
(ii) 79684 by 4
(iii) 2712 by 6

SOLUTION-

(i) 7 + 1 + 2 + 2 = 12 (divisible by 3). The number 7122 is divisible by 3.

(ii) 796**84,** 84 is divisible by 4. 4 x 21 = 84. The number 79684 is divisible by 4.

(iii) 2712- To check its divisibility, we will first look at the last digit and then add all the digits together. Since the last digit is even, it is divisible by 2. 2 + 7 + 1 + 2 = 12. 12 is divisible by 3. So the number 2712 is divisible by 6.

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