परमाणु ऊर्जा शिक्षण संस्था
Atomic Energy Education Society
कार्यपत्रक / Worksheet (2025-26)

कक्षा/Class: VII   विषय/Subject: Mathematics   माह/ Month: August अंक/Marks: 40

दिया गया पाठ्यक्रम /Portion covered: Chapter 06 (Number Play)

विद्यार्थी का नाम/Name of the student: _____

अनु क्रमांक / Roll No._____   कक्षा /अनुभाग Class /Sec.:_____ दिनांक /Date: _____

_____

Section A (1×10 = 10 Marks)

1 What shape is formed by connecting corners of opposite numbers in a 3× 3 magic square?   **[1]**

   a) Circle

   b) None of these

   c) Diagonal cross

   d) Triangle

2 Which of the following numbers is both a square and a cube?   **[1]**

   a) 64

   b) 25

   c) 81

   d) 16

3 What is the parity of the product of two even numbers?   **[1]**

   a) Can't say

   b) Even

   c) Odd

   d) Prime

4 What is the total number of diagonals in a square?   **[1]**

   a) 8

   b) 6

   c) 4

d) 2

5   The sum of digits of a number is 18. Which of the following must be true?   **[1]**

a) It is divisible by 9

b) It is a prime number

c) It is a square number

d) None of these

6   Which number has different parity from the rest?   **[1]**

a) 16

b) 24

c) 19

d) 12

7   Which of the following is an even number?   **[1]**

a) 27

b) 13

c) 48

d) 95

8   Which trick shows number symmetry?   **[1]**

a) Reverse addition

b) All of these

c) Number palindromes

d) Mirror numbers

9   Which of the following is **not** a Fibonacci number?   **[1]**

a) 34

b) 13

c) 21

d) 45

10   Fibonacci numbers can be used to model: **[1]**

a) Prime numbers

b) Population growth

c) Square roots

d) Even numbers

Section B (2× 4 = 8 Marks)

11 State whether the given statement is True or False: **[1]**

Two odd numbers when multiplied give an even number.

12 State whether the given statement is True or False: **[1]**

1001 is only divisible by 7.

13 Fill in the blanks: **[1]**

In a grid of size 4× 4, there are _____ rows.

14 Write the Fibonacci sequence. **[1]**

15 Write the numbers that occur most frequently in the first 50 natural numbers. Also, find the sum of these numbers. **[2]**

16 Find the digit in the units place of the product: 7× 3 × 9. Also, explain how the digit in the units place of a product can be determined using patterns. **[2]**

Section C (3×3 = 9 Marks)

17 We are often asked to find specific digits (like units or tens place) in the product of two numbers. **[3]**

1. Multiply 12× 14.

2. Find the digit in the tens place of the product.

Also, explain step - by - step how the tens digit is found and why it's important in real - world problems.

18 The Fibonacci sequence is a special sequence in mathematics. **[3]**

1. Find the 10th term in the Fibonacci sequence.

2. Calculate the sum of the first 10 Fibonacci numbers.

Also, explain how the sequence is formed and how you arrived at your answer.

19 Show that the sum of odd numbers results in an even number. **[3]**

Section D (5× 1= 5 Marks)

20 Using the numbers from 1 to 100, find the frequency of digit 7 in the units place and tens place. Also, calculate the total sum of all numbers that contain digit 7 in any place. **[5]**

Section E (4× 2 = 8 Marks)

21 **Read the following text carefully and answer the questions that follow:** **[4]**

Anika was solving a worksheet full of 3 - digit numbers. She was told to use divisibility rules instead of long division. She recalled that if the sum of the digits is divisible by 3 or 9, then the number is too. If a number ends in 0 or 5, it's divisible by 5. For 6, the number should be divisible by both 2 and 3.

She tried this with 180, 243, and 355. For 180, 1 + 8 + 0 = 9 → divisible by 9. It ends in 0 → divisible by 5 and 10. She applied similar checks to the others and got all answers correct. She loved how simple tests could save so much time.

Questions:

1. What is the sum of digits in 243? **(1)**

2. Is 355 divisible by 5? **(1)**

3. Is 180 divisible by 3, 5, 6, and 9? Show how. **(2)**

OR

Use digit sum tests to check if 243 is divisible by 3 and 9. **(2)**

22 **Read the following text carefully and answer the questions that follow:** **[4]**

Vidya played an exciting grid game in her classroom where she had to fill numbers from 1 to 9 in a 3 × 3 grid without repeating any number. As she filled in the grid correctly, she noticed something interesting - the sum of each row, column, and diagonal was the same. She added all the numbers and found that their total was 45. Her teacher explained that this type of grid is called a magic square, where the arrangement of numbers creates a special property: all rows, columns, and diagonals add up to the same magic number. Through this activity, Vidya learned how number patterns and arithmetic can combine to create mathematical puzzles that are both fun and educational. **Questions:**

1. What is the total sum of numbers from 1 to 9? **(1)**

2. What is the name of a square where all rows, columns, and diagonals have the same sum? **(1)**

3. In a 3× 3 magic square using numbers 1 to 9, what should be the sum of each row or column? Show how it's calculated. **(2)**

OR

Explain why the numbers in a 3 × 3 magic square must be unique and cannot be repeated. **(2)**