



ASSIGNMENT-5



Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

A. Multiple Choice Type Questions

Identify the correct answer.

- The sum of a palindromic number and its reverse is 242. The number is:
(a) 121 (b) 131 (c) 202 (d) 101
- Which of the following sequences follows the Collatz Conjecture?
(a) $7 \rightarrow 22 \rightarrow 11 \rightarrow 32 \rightarrow 16 \rightarrow 8 \rightarrow 4 \rightarrow 2 \rightarrow 1$
(b) $15 \rightarrow 46 \rightarrow 23 \rightarrow 70 \rightarrow 35 \rightarrow 104 \rightarrow 52 \rightarrow 26 \rightarrow 13 \rightarrow 40 \rightarrow 20 \rightarrow 10 \rightarrow 5 \rightarrow 16 \rightarrow 8 \rightarrow 4 \rightarrow 2 \rightarrow 1$
(c) $50 \rightarrow 25 \rightarrow 76 \rightarrow 38 \rightarrow 19 \rightarrow 58 \rightarrow 29 \rightarrow 88 \rightarrow 44 \rightarrow 22 \rightarrow 11 \rightarrow 34 \rightarrow 17 \rightarrow 52 \rightarrow 26 \rightarrow 13 \rightarrow 40 \rightarrow 20 \rightarrow 10 \rightarrow 5 \rightarrow 16 \rightarrow 8 \rightarrow 4 \rightarrow 2 \rightarrow 1$
(d) All of these
- If we start the Collatz sequence at 22, how many steps are required to reach 1?
(a) 13 (b) 14 (c) 15 (d) 16
- How many palindromic numbers are there between 100 and 500?
(a) 30 (b) 40 (c) 50 (d) 60
- Take a three-digit number, reverse its digits, and subtract the smaller number from the larger one, the result is always:
(a) A multiple of 9 (b) A multiple of 99 (c) A multiple of 11 (d) All of the above
- What is the number of steps required for 9875 to reach Kaprekar's constant?
(a) 3 (b) 5 (c) 7 (d) 9
- The supercell number in the given series is

2180	3052	7950	9000	8632	2956
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(a) 3050 (b) 7950 (c) 9000 (d) 2956
- The difference between two 5-digit numbers can be a
(a) two-digit number (b) three-digit number (c) four-digit number (d) All of the above

B. Assertion and Reason Type Questions

In the following questions, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option.

- Both Assertion (A) and Reason (R) are true and Reason (R) is a correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true but Reason (R) is not a correct explanation of Assertion (A).
(c) Assertion (A) is true but Reason (R) is false.
(d) Assertion (A) is false but Reason (R) is true.
- Assertion:** Every four-digit palindromic number is divisible by 11.
Reason: A four-digit palindrome can be expressed in the form ABBA.
- Assertion:** 285 rounded off to the nearest tens is 290.
Reason: If the digit to the right of the rounding place is 5 or greater, round up by adding 1 to the digit.