**SET 1**

**Q1. (Algorithms – 5 Marks)**

Use AI to write Python code for **Quick Sort**.  
Sort the array:  
[90, 12, 77, 23, 5, 41, 68]  
Explain AI’s suggestions for pivot selection.

**Q2. (Frontend – 5 Marks)**

With AI help, create a webpage showing **live digital clock** using JavaScript.  
Format: HH:MM:SS AM/PM  
Style using AI-generated CSS.

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**SET 2**

**Q1. (Data Structures – 5 Marks)**

Using AI, create a Python implementation of a **Binary Search Tree (BST)** with:

* Insert
* Inorder traversal
* Search operation  
  Demonstrate all operations with sample input.

**Q2. (Algorithms – 5 Marks)**

Use AI to write Python code for **Linear Search with early exit optimization**.  
Apply it on a list of 20 elements.  
Display number of comparisons.

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**SET 3**

**Q1. (Algorithms – 5 Marks)**

With AI, generate a Python script to implement **Fibonacci sequence using Dynamic Programming** (tabulation).  
Print first 15 values and compare runtime with a recursive version.

**Q2. (Frontend – 5 Marks)**

Use AI to build a **student marks dashboard** using HTML + CSS + JS.  
Features:

* Input fields
* Button to calculate total and grade
* Display result dynamically

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### ****SET 4****

**Q1. (Algorithms – 5 Marks)**

Use AI to generate Python code that finds the **minimum and maximum** in an array using the **divide and conquer approach**.  
Test with a 12-element list.

**Q2. (Frontend – 5 Marks)**

With AI assistance, generate a webpage containing an **image gallery** arranged in a 3-column responsive grid.  
Add JavaScript for image enlargement on click.

QUESTION-1 OUTPUT:

QUESTION 2 OUTPUT

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### ****SET 5****

**Q1. Data Structures & Algorithms (5 Marks)**

Using AI assistance, write a Python script to implement **Merge Sort**.  
Your script should:

1. Take a list of unsorted integers as input
2. Use Merge Sort to sort the list
3. Print each merge step (showing how subarrays are combined)

**Q2. (Web Frontend – 5 Marks)**

With AI assistance, generate a your personal **Portfolio Website** including