

|  |  |
| --- | --- |
| **Branch/Semester** | B.Tech CSE (AI, ML & DS) / Semester I |
| **Subject Name:** | Computer Programming |
| **Subject Code:** | 01CE2101 |
| **Assignment:** | Practice Questions (Pointers and Dynamic Memory Allocation) |
| **Date:** | 8th October 2025 |
| **Faculty Name:** | Prof. Abhishek Chauhan |

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr.** | **Question** | **CO** | **BL** |
| **1** | Write a simple C program to declare a pointer variable, initialize it, and display its address and value. | CO4 | BL3 |
| **2** | Write a C program to demonstrate pointer arithmetic (increment and decrement operations on pointers). | CO4 | BL3 |
| **3** | Write a C program to use a pointer to access and modify the value of a variable. | CO4 | BL3 |
| **4** | Write a program to input and print elements of an array using pointers instead of array indexing. | CO4 | BL3 |
| **5** | Write a C program to find the sum of all elements of an array using pointers. | CO4 | BL3 |
| **6** | Write a C program to demonstrate the concept of a pointer to a pointer (chain of pointers). | CO4 | BL3 |
| **7** | Write a C program to swap two numbers using call by reference (using pointers). | CO4 | BL3 |
| **8** | Write a C program that uses malloc() to allocate memory dynamically for an integer array and input elements. | CO4 | BL3 |
| **9** | Write a C program that uses calloc() to allocate memory for an array of n integers, take input, and display the array elements. | CO4 | BL3 |
| **10** | Write a C program to dynamically allocate memory using malloc(), then resize it using realloc(). | CO4 | BL3 |
| **11** | Write a C program to demonstrate the use of free() to release allocated memory. | CO4 | BL3 |
| **12** | Write a program to compare the behavior of malloc() and calloc() by initializing and printing array values. | CO4 | BL4 |
| **13** | Write a program to allocate memory for a string using malloc() and then print the entered string. | CO4 | BL3 |
| **14** | Write a program to find the largest number in a dynamically allocated array using pointers. | CO4 | BL3 |
| **15** | Write a C program to demonstrate dynamic memory allocation for a 2D matrix using pointers and malloc(). | CO4 | BL4 |