**Internal Assessment (Assignment)**

**Course Code:** 23OMC103 **Last Date of Submission:** 04-Dec-2023

**Course Title:** Programming and Problem-Solving Laboratory **Assignment Marks**: 30

**Assignment No.: 1**

**Note:**

1. The assignment has two parts: **A** and **B**.
2. Part A has ten MCQs carrying one mark each. Answer **ALL** ten MCQs.
3. Part B has eight descriptive questions carrying four marks each. Attempt **any** **FIVE** questions out of eight.

**Part A** **(10 1 = 10 Marks)**

Answer **all questions** **MCQ 1** to **MCQ 10**

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| **MCQ No.** | **Question** | **Course Outcome** |
| 1 | What is the output of the following program?  #include <stdio.h>  int main()  {  int j = 2;  printf("%d", (++j)++);  return 0;  } | CO-2 |
| Answer Choices: | 1. 4 2. Compilation error 3. Run-time error 4. 8 |  |
| 2 | In C, by default parameters are passed to function using------ | CO-1 |
| Answer Choices: | 1. Call by value 2. Call by reference 3. Using pointers 4. Using function call |  |
| 3 | Which of the following is not a data type in C? | CO-1 |
| Answer Choices: | 1. int 2. real 3. float 4. double |  |
| 4 | What will be placed instead of ? in the following C program to print **Home**?  #include <stdio.h>  int main()  {  char name[] = "WelcomeHome";  printf("%s", ?);  return 0;  } | CO-2 |
| Answer Choices: | 1. name 2. name+7 3. Not possible 4. name + 4 |  |
| 5 | Structures can be manipulated using ------- operator | CO-1 |
| Answer Choices: | 1. Equality Comparison (==) 2. Assignment (=) 3. None of the above 4. Both the above |  |
| 6 | What will be the output of the following C Program if the input is **Happy Birthday**?  int main()  {  char str[50];  scanf("%4s", str);  printf(str);  return 0;  } | CO-3 |
| Answer Keys: | 1. Happy 2. thday 3. Happ 4. Birth |  |
| 7 | What will be the output of the following program? Assume character data type consumes one byte.  #include<stdio.h>  int main()  {  char str[50] = "Graphic Era University";  printf ("%d", sizeof(str));  return 0;  } | CO-2 |
| Answer Keys: | 1. 50 2. 22 3. 1 4. 3 |  |
| 8 | ------- of the following is not a valid keyword in C. | CO-1 |
| Answer Keys: | 1. for 2. while 3. do-while 4. switch |  |
| **9** | The format specifier for double data type is ------------------. | CO-1 |
| Answer Keys: | 1. %ld 2. %f 3. %d 4. %double |  |
| 10 | What will be the output of the following program?  #include<stdio.h>  int main()  {  char str[50] = "Goodmorning";  printf ("%d", sizeof(str));  printf(/\*"Hello World"\*/ "How are you?");  return 0;  } | CO-2 |
| Answer Key | 1. 50 2. 50How are you? 3. Compiler Error 4. How are you? |  |

**Part B (5 4 = 20 Marks)**

Attempt **ANY FIVE** questions from Q 1 to Q 8.

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| **Q No.** | **Question** | **Course Outcome** |
| **1** | Compare structures and unions using suitable examples. | CO-1 |
| **2** | Develop a C program that reads a person’s age and name. Print the name of a person as many times as his/her age. Use for, while, or do-while loop. | CO-2 |
| **3** | Develop a C Program to read the price and quantity of electronic items in a shop. Calculate the cost of each item as quantity X price items as an input. Develop another C function to calculate the discount according to the following rules:   * For a total of less than Rs.1000, the discount is 5%. * For a total greater than Rs.1000 but less than Rs.5000, the discount is 10%. * For a total greater than Rs.5000, the discount is 15%. | CO-3 |
| **4** | Demonstrate a C program that reads a string. Check whether there are three consecutive ‘a’. If there are three consecutive ‘a’, then print YES else print NO.  Input: Maharaja  Output: NO  Input: Bazaar  Output: YES | CO-1 |
| **5** | Develop a C Program to check whether the entered number is an Armstrong number. Armstrong number is a number where the sum of the cube of each digit is the same as the original number as given below.  0=  1=  153=  370= | CO-1 |
| **6** | Develop a C program to compute the distance between the points (x1, y1) and (x2, y2) | CO-1 |
| **7** | Develop a C program to read and print numbers in an array using pointers. | CO-1 |
| **8** | Develop a C Program that reads the contents of two files namely *one.dat* and *two.dat*. Store 50 numbers in each file. Merge both the files and store the numbers in a sorted form in a new file with the name *third.dat*. | CO-1 |

**Course Outcomes:**

1. Develop an algorithm, draw a flowchart, and write a ‘C’ program to solve a given problem. [L-3]
2. Make use of online GDB 'C' Debugger/Compiler for programming, debugging, and executing the programs. [L-2]
3. Demonstrate the use of expressions, decision structures, loops, functions, recursive functions, arrays, strings, structures, and pointers in problem-solving.[L-3]
4. Document the conclusion and observations made from the implementation.[L-3]