

December 2023

B.Sc (Life Science) III SEMESTER

Introduction to Programming (OCSC-101A)

Time: 3 Hours

Max. Marks:75

- Instructions:**
1. It is compulsory to answer all the questions (1.5 marks each) of Part -A in short.
 2. Answer any four questions from Part -B in detail.
 3. Different sub-parts of a question are to be attempted adjacent to each other.

PART -A

- Q1 (a) Differentiate between a variable and a constant. (1.5)
- (b) How Do-While Loop is different from While Loop? (1.5)
- (c) What are Header Files? (1.5)
- (d) What is the use of `getc()`, `getchar()` and `putchar()`? (1.5)
- (e) What are preprocessor directives? (1.5)
- (f) What do you mean by Function prototype and Function definition? (1.5)
- (g) Differentiate between Call by Value and Call by Reference. (1.5)
- (h) Write a program to display contents of an Integer Array. (1.5)
- (i) What are Constructors? Why they are used? (1.5)
- (j) What are different file open modes? (1.5)

PART -B

- Q2 (a) Discuss the importance of using primitive and user defined data types available in C Language with example. (5)
- (b) Give the output of the following code snippet (5)
- ```
#include <stdio.h>
void main()
{
 int p1 = 100, p2 = 200, p3, p4;
 p3 = p1++;
 p1 = ++p2;
 p4 = p1 + p2--;
 printf ("%d %d %d %d", p1, p2, p3, p4);
}
```
- (c) Explain different types of operators used in C Language with example. (5)
- Q3 (a) Write a program to multiply two matrices. (5)
- (b) Define a C String and discuss various library functions available in String.h header file. (10)

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- Q4 (a) What are void and Inline Functions? Why they are used (5)  
(b) Explain the similarities and difference between Function and a macro. Also write a program to print reverse of a number (10)
- Q5 (a) What are structures? How members of a structure are created and accessed? Explain with the help of example. Also specify whether structures can be inherited or not? (10)  
(b) Write a program to input string from a keyboard and write them in file. (5)
- Q6 (a) Differentiate between Object oriented and Procedure Oriented Programming. (5)  
(b) What is a Class? Specify the access modifiers associated with class members? How it is different from a Structure. (5)  
(c) Write a program to demonstrate the concept of Inheritance. (5)
- Q7 Write short note on any three of the following (15)  
i. Implicit and Explicit Casting  
ii. Variable Scope  
iii. Recursion  
iv. Function Overloading

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