



PBL-1603220001030300 Seat No. _____

B. Sc. (Bioinfor.) (Sem. III) (CBCS) Examination

November / December - 2018

BI - 303 : Programming in C

(New Course)

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- 1 (a) Answer the following short questions. 4
- (1) What is an algorithm ?
 - (2) Define the term flowchart.
 - (3) Which symbol is used to represent decision-making in flowchart ?
 - (4) What are pseudo codes ?
- (b) Answer any 1 of the following questions. 2
- (1) Why are computer programming techniques important ?
 - (2) Write down the advantages of flowchart.
- (c) Answer any 1 of the following questions. 3
- (1) Draw a flowchart to find out the smallest number of the given three numbers.
 - (2) Give points of difference between Flowchart and Algorithm.
- (d) Answer any 1 of the following questions. 5
- (1) What are Programming tools ? Explain the importance of algorithm in programming with its advantages and disadvantages.
 - (2) Explain flowchart with its symbol and suitable example.
- 2 (a) Answer the following short questions : 4
- (1) When and by whom was the C language developed ?
 - (2) What is the range of int data type ?
 - (3) How many keywords are there in C language ?
 - (4) What is a C character set ?
- (b) Answer any 1 of the following questions : 2
- (1) What are C tokens ?
 - (2) What rules are to be considered while naming a variable in C program ?
- (c) Answer any 1 of the following questions. 3
- (1) Draw and explain the basic C program structure.
 - (2) Explain printf() and scanf() function with example.

- (d) Answer any 1 of the following question : 5
- (1) What is C programming language ? Explain the history of C language.
 - (2) List and explain in detail the types of operators in C.
- 3 (a) Answer the following short questions. 4
- (1) What is the result of variable i after executing following code ?

```
#include<stdio.h>
#define j 3+2
void main( )
{
    int i;
    i = j * j ;
    printf ("%d",i);
}
```
 - (2) Evaluate the output of the following program

```
#include<stdio.h>
void main( )
{
    while (1)
    {
        printf("Hello World");
    }
}
```
 - (3) What is the value of variable X after executing the following code ?

```
#include<stdio.h>
void main( )
{
    int X;
    X = 3;
    ++X + X++;
    printf ("%d", X);
}
```
 - (4) Which loop is called exit controlled loop ?
- (b) Answer any 1 of the following question. 2
- (1) Define global and local variable.
 - (2) What is the use of break and continue statements ?
- (c) Answer any 1 of the following question : 3
- (1) Differentiate Call by value vs. Call by reference.
 - (2) Write a note on Goto with label.

- (d) Answer any 1 of the following question. 5
- (1) What is a UDF ? List and explain the types of UDF.
 - (2) Write a C program to find the factorial of a given number using recursion.

- 4 (a) Answer the following short questions. 4
- (1) The Index of array elements starts with _____.
 - (2) A string is represented by _____ in a C program.
 - (3) Structure and union are the user-defined data types. True or False ?
 - (4) State number of bytes occupied in memory by the following union block :
union demo {
 int a;
 char c;
};

- (b) Answer any 1 of the following question. 2
- (1) What is an Array ? Explain the declaration and initialization of 1-Dimensional integer Array with syntax and example.
 - (2) Differentiate structure and array.

- (c) Answer any 1 of the following question. 3
- (1) Write a program to find and print the sum of 5 array elements entered by the user.
 - (2) Explain following functions with suitable example.
 - (i) gets()
 - (ii) puts()
 - (iii) getc()
 - (iv) putc()

- (d) Answer any 1 of the following questions. 5
- (1) Write a short note on structure and union.
 - (2) Write a program to calculate the total of the three subjects' marks of three students with the percentage and display it on the screen using the following structure.
struct stud
{
 int rno; //student roll number
 char sname[20]; //student name
 int mark1, mark2, mark3, total;
 float per;
};s[3];

- 5 (a) Answer the following short questions. 4
- (1) What will be the output of the following program ?
- ```
#include<stdio.h>
void main()
{
 int *ptr, a=20;
 ptr = &a;
 *(ptr) + =1;
 printf ("%d", *ptr);
}
```
- (2) Which function is used to create and open a file in C ?
- (3) What is DMA in C ?
- (4) What will be the output of the following program ?
- ```
#include <stdio.h>
void main( )
{
    int i=1, *j, **k;
    j = &i;
    k = &j;
    printf ("%d, **k);
}
```
- (b) Answer any 1 of the following questions. 2
- (1) Write down any two advantages of pointer.
- (2) List the file modes available to open a file in C.
- (c) Answer any 1 of the following questions. 3
- (1) What is a pointer ? Write the declaration and initialization of a pointer with syntax and example.
- (2) Explain following functions with suitable examples.
(i) calloc() (ii) malloc() (iii) free()
- (d) Answer any 1 of the following question. 5
- (1) Write a program to create a file "demo.txt" and write a text :Hello...Welcome to File Handling in C" into it. Read the same data from the file and print it on the screen. If file not exist, print error message.
- (2) Explain file handling in C with suitable example.
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