B. C. A. (Sem. I) (CBCS) (W.E.F. 2019) Examination

February - 2022

**CS-02 : Problem Solving Methodologis &
Programming in C**

**Faculty Code : 003
Subject Code : 2031002**

Time : $2\frac{1}{2}$ Hours]   [Total Marks : **70**

Instruction : Attempt any five questions out of ten.

1 (a) Answer the following :   4
      (1) Which symbols are used in conditional operator ?
      (2) Which tool is called the graphical representation
           of any program ?
      (3) ASCII stands for _____.
      (4) Who developed C language ?

   (b) Answer in brief :   2
        Explain C Character set.

   (c) Answer in detail :   3
        Explain scope and lifetime of variable.

   (d) Answer in detail :   5
        Explain structure of C program in detail.

2 (a) Answer the following :   4
      (1) Where C language was developed ?
      (2) What is the other name of Backslash character
           constants ?
      (3) Which escape sequence character is used to print
           a character from new line ?
      (4) What is the full form of .c file ?

   (b) Answer in brief :   2
        Explain type casting.

   (c) Answer in detail :   3
        Draw a flowchart to display Fibonacci series.

   (d) Answer in detail :   5
        Explain different types of operators in C.

3 (a) Answer the following : 4
  (1) Which one is exit control loop ?
  (2) Which keyword is known as backward jumping statement ?
  (3) Which operator perform same operation as if...else statement ?
  (4) Which logic is used for looping statements ?

 (b) Answer in brief : 2
  Differentiate : while loop v/s. do...while loop.

 (c) Answer in detail : 3
  Explain break and continue statements.

 (d) Answer in detail : 5
  What is loop ? Explain while loop in detail with example.

4 (a) Answer the following : 4
  (1) List out Entry control loop.
  (2) Which keyword is used to terminate the loop ?
  (3) How many types of loop are there in C ?
  (4) What is the output of following code ?

```
#include<stdio.h>
void main () {
    int n=1;
    while (n++ < 10) {
       if (n<5 && n<10)
       printf ("%d", n);
    }
}
```

 (b) Answer in brief : 2
  Explain goto statement.

 (c) Answer in detail : 3
  List out conditional control statements. Explain if...else

 (d) Answer in detail : 5
  Explain switch case with example.

5 (a) Answer the following : 4
  (1) Which header file is required for rand () ?
  (2) How many values can be returned by function ?
  (3) What is the default value of static variable ?
  (4) Which one is the default storage class ?

(b) Answer in brief :   2

Explain atol() and rand () function.

(c) Answer in detail :   3

Differentiate : call by value v/s. call by reference.

(d) Answer in detail :   5

List out types of User Defined Function. Explain any two in detail.

6 (a) Answer the following :   4

(1) Which header file is used for character conversion and character checking ?

(2) To find length of the string which function is used ?

(3) Which data type is used when functions does not return any value ?

(4) Which function is used to find that given argument is alphabet or digit ?

(b) Answer in brief :   2

Explain recursion.

(c) Answer in detail :   3

List out string functions. Explain any one with example.

(d) Answer in detail :   5

Explain memory allocation functions.

7 (a) Answer the following :   4

(1) Array index starts from _____

(2) Which operator is used access structure member ?

(3) Array means collection of ____ data types.

(4) How many ways structure variable can be declared ?

(b) Answer in brief :   2

Explain Array within structure.

(c) Answer in detail :   3

Explain nested structure in detail.

(d) Answer in detail :   5

Write a program to input 10 different numbers in array and sort them into ascending order.

8 (a) Answer the following : **4**
   (1) How many ways we can initialize array variable ?
   (2) Which type of array is used to store elements in a matrix format ?
   (3) Which operator is used to access pointer to structure ?
   (4) Structure is collection of _____ data types.

   (b) Answer in brief : **2**
   Differentiate : Structure v/s. Union.

   (c) Answer in detail : **3**
   Explain string array with example.

   (d) Answer in detail : **5**
   What is array ? Explain two-dimensional array with example.

9 (a) Answer the following : **4**
   (1) Which operator is used to declare a pointer variable ?
   (2) Which type of value return by feof() ?
   (3) What is the meaning of pointer to structure ?
   (4) To set a file position at a desired place which function is used ?

   (b) Answer in brief : **2**
   Explain rewind () function.

   (c) Answer in detail : **3**
   Explain fseek(), ftell() and feof() functions.

   (d) Answer in detail : **5**
   Explain pointer to array.

10 (a) Answer the following : **4**
   (1) To open a file or create a new file which function is used ?
   (2) Which operator is known as indirection operator ?
   (3) Pointer holds which type of value ?
   (4) argc and argv [ ] are which kind of variable ?

   (b) Answer in brief : **2**
   Explain pointer to variables.

   (c) Answer in detail : **3**
   Explain file opening mode available in C.

   (d) Answer in detail : **5**
   Explain command line arguments with example.