



PBK-003-1031002

Seat No. _____

B. C. A. (Sem. I) (CBCS) Examination

November / December - 2018

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

Faculty Code : 003

Subject Code : 1031002

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

[Total Marks : 70

- 1 (a) Attempt the following : 4
- (1) C language was designed and written by _____.
 - (2) _____ is a graphical representation of an algorithm.
 - (3) Point out errors, if any, in the following program.

```
#include<stdio.h>
#define MSG printf("Hello World");
Void main( )
{
    MSG
}
```
 - (4) What will be the output of the following program ?

```
#include<stdio.h>
void main( )
{
    int a=10;
    printf("%d\t%d",a++,--a);
}
```
- (b) Explain any **one** with example : 2
- (1) typedef keyword
 - (2) #pragma directive
- (c) Answer any **one** : 3
- (1) Write down rules for constructing variables names.
 - (2) Explain implicit type conversion with example.
- (d) Answer any **one** : 5
- (1) Explain primary data type in C.
 - (2) Explain basic structure of C program with example.

2 (a) What will be the output of the following programs ? 4

- (1) `#include<stdio.h>`
`void main()`
`{`
`int x=0;`
`if(!x)`
`printf("Let us C");`
`else`
`printf("Wish C was free!!");`
`}`
- (2) `#include<stdio.h>`
`void main()`
`{`
`int a=35,b=55;`
`if(a>10 && b<100)`
`{`
`if (a==35 || b!=55)`
`printf("C language is very easy");`
`else`
`printf("C language is very hard");`
`}`
`}`
- (3) `#include<stdio.h>`
`void main()`
`{`
`int p,q,r;`
`for(p=1,q=2,r=3;p<=1 && q<=2 && r<=3;p++)`
`printf("C is POP language");`
`}`
- (4) `#include<stdio.h>`
`void main()`
`{`
`int ans=1;`
`do`
`{`
`++ans;`
`printf("God is Grate");`
`}while(ans<1);`
`}`

(b) Explain any **one** keyword with example : 2

- (1) `break`
(2) `continue`

(c) Answer any **one** : 3

- (1) Explain nested if statement with example.
(2) Explain with example how conditional operator is equivalent to if...else ?

- (d) Answer any **one** : 5
- (1) Which are entry-controlled loop ? Explain any one with syntax and example.
 - (2) Explain switch statement with its syntax, flow control and example.
- 3 (a) Fill in the blanks in following statement : 4
- (1) _____ is a block of code to perform specific task.
 - (2) rand() generates _____.
 - (3) sqrt() return _____.
 - (4) A static variable by default gets initialized to _____.
- (b) Explain any **one** built-in function with usage and example : 2
- (1) malloc()
 - (2) atof()
- (c) Answer any **one** : 3
- (1) Differentiate : call by value and call by reference.
 - (2) Write a recursive function to find sum of digits of given number.
- (d) Answer any **one** : 5
- (1) What is function ? Explain elements of function with example.
 - (2) Write down usage, syntax and example of delay(), realloc() and floor() functions.
- 4 (a) Attempt the following : 4
- (1) Array elements are stored in _____ memory location.
 - (2) The name of an array represent _____ of an array.
 - (3) In an array in arr[3][2][3], how will you refer the first and last element in this array ?
 - (4) What will be the output of following program ?
- ```
#include<stdio.h>
void main()
{
 struct student
 {
 int grno;char snm[20];
 };
 printf("Size=%d", sizeof(struct student));
}
```

- (b) Answer any **one** : 2
- (1) How many ways to initialize a 1-D array ? demonstrate with code segment.
  - (2) What is array ? List out types of array.
- (c) Answer any **one** : 3
- (1) How pointer to array passes to function ? Demonstrate with example.
  - (2) Differentiate : Structure and union.
- (d) Answer any **one** : 5
- (1) Explain array of structure with example.
  - (2) Explain two dimensional arrays with code segment.
- 5 (a) Attempt the following : 4
- (1) The FILE structure is defined in which header file ?
  - (2) ftell( ) return \_\_\_\_\_.
  - (3) What will be the output of the following program ?  

```
#include<stdio.h>
void main()
{
 int *x;
 float *y;
 long double *z;
 printf("\n Size of x=%d", size of (x));
 printf("\n Size of y=%d", size of (y));
 printf("\n Size of z=%d", size of (z));
}
```
  - (4) State True or False : If a file is opened for reading it is necessary that the file must exist.
- (b) Answer any **one** : 2
- (1) What is file ? Explain fopen( ) with example.
  - (2) What is pointer ? Explain pointer arithmetic with example.
- (c) Answer any **one** : 3
- (1) Write note on file opening mode available in C.
  - (2) Write down usage and example of fseek( ), feof( ), and rewind( ).
- (d) Answer any **one** : 5
- (1) What is command line argument ? Demonstrate with example.
  - (2) Write C code to perform file copy operation of given files.