

Problem Solving & Programming Concepts (BCA-101)

Duration: 2 hours

Total Marks: 50

Instruction : 1) All Questions are Compulsory
2) Figures to right indicate marks

Q1 A) Explain the following terms.

(5mks)

- | | |
|---------------------|-----------------------|
| a) Compiler | b) Recursive function |
| c) Pointer | d) keyword |
| e) System Software. | |

B) State true or false.

(5mks)

1. An expression in C-language is evaluated based on the hierarchy or precedence of operators.
2. A structure is used to store dissimilar data together.
3. The last index value in the array declaration `char arr[7]` is 7.
4. Variables declared in a function are not available to other functions in a program.
5. `gets()` can take multi word as the input at run time.

Q2) Answer the following.

- | | |
|--|--------|
| A. What are the different data types supported by C-compilers ? | (2mks) |
| B. What is algorithm ? Write an algorithm to find sum of first N numbers | (3mks) |
| C. What is a Flowchart ? Draw a Flowchart to Find Reverse of a Number | (5mks) |

Q3) Answer the following.

A) Fix the bug from the code given below & find its output .

(2mks)

```
Int i ;  
For (i=2 , i<=6 , i++)  
{ Print ("%f", i+2)  
}
```

B) Create a structure in C Language to specify data on employee with structure element Name, age, Salary.

Declare one structure variable to read data & print the data.

(3mks)

C) With an appropriate example explain the working of ladder if .

(5mks)

Q4) Answer the following

A. Find the output of the following

(2mks)

Assume : address of i to be 1234 and address of j to be 5678

```
main()
{
    int i=5;
    int *j;
    j = &i;
    printf("value1 %d", j);
    printf("value2 %d", *j);
    printf("value3 %d", *(&i));
    printf("value4 %d", &i);
}
```

B. Given a Character array .

char arr_x[]="India" ;

char arr_y[]="Mycountry" ;

Which functions would be used for the following :

- i) Compare arr_x[] and arr_y[].
- ii) To concatenate arr_y[] with arr_x[]
- iii) Find the length of arr_x[].

(3mks)

C. Give the differences between

(5mks)

- i) Structure & array.
- ii) compiler & interpreter
- iii) Pointer variable & variable.
- iv) Break & continue.
- v) scanf("%s",&x) and gets(x) where x is character array.

Q5) Answer the following

A) Describe four relational operators included in C.

(2mks)

B) Compare the use of switch statement with nested if-else statements. Which is more convenient to use.

(3mks)

C) Explain the following in one or two lines.

(5mks)

- i) Library functions
- ii) System software
- iii) Difference between while loop and do while loop
- iv) Order of precedence of Arithmetic operators
- v) Difference between break and continue statements.

-----Best of luck-----