2014

Basic Computation & Principles of Computer Programming

Time Alloted : 3 Hours *Full Marks : 70*

The figure in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable

GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any ten of the following: 10x1=10

i) 'C' is often called a

a) Object oriented language b) System software
c) High level language d) None of these.

ii) ALU is a part of

a) memory b) CPU
c) output device d) input device.

iii) Which will be the output?

```
void main()
{
        int x = 7, y=5
        X = y++ + x++;
        y = ++y + ++x;
        printf("%d%d", x, y);
}
```

a) 12 14 b) 12 20 c) 97 d) 12 19.

iv) The < < operator is used for

a) one return statement
b) two return statements
c) more than two return statements
d) Left shifting

v) Which one of the following is a Bitwise operator?

a) < b) >= c) && d) <<.

vi) The output of

```
int fact = 1;
for(i = 0; i <fact; i++)
{
        fact = fact *I;
        printf("%d", fact);
}
```

is

a) 24 b) 5
c) infinite loop d) none of these.

vii) which one is the correct output?

```
char a[] = "computer";
printf("%d", strlen(a));
```

a) 9 c) 8 b) 10 d) 11

viii) 'C' allows a three-way transfer of control with the help of

a) unary operator
b) comparison operator
d) ternary operator
c) relational operator

ix) The size of a printer to a float array of size 10 is:

a) 40 Byte b) 4 Byte
c) 2 Byte b) None of these.

x) The union holds

a) value of one member at a time
b) values of multiple members at a time.

c) Not value but a address of one member at a time
d) Addresses of multiple members at a time.

GROUP - B

(Short Answer Type Questions)

Answer any *three* of the following. 3x5=15

2. Explain precedence and associativity of operators with suitable examples. (5)
3. Discuss about basic data types used in C. (5)
4. Distinguish between structure and union. (5)
5. What is recursion? Explain with an example. (5)
6. Differentiate : (i) Compiler and Interpreter. (ii) Post increment and Pre increment operator.

2½+2½=5

GROUP - C

(Long Answer Type Questions)

Answer any *three* of the following. 3x15=45

7. a) What is ternary operator? Explain with an example.
   b) Explain "Call by Value" and "Call by Reference" with example.
   c) Write a C function to swap two integer data and call the function from the main() function.

(5+5+5)

8. a) Write a C program to generate n Fibonacci numbers using recursion function.
   b) Write a C program to complete the Trace of a user inputted matrix.
   c) What do you mean by algorithm? Explain with an example.

(5+5+5)

9. a) Convert
   i) $(427)_{10}$ to octal
   ii) $(110010.1011)_2$ to hexadecimal
   iii) $(12.32)_{10}$ to Binary
   iv) $(234)_5$ to $(?)_7$
   b) Subtract 10111 from 110011 using 2's complement method.
   c) Draw the logic diagram and truth table of NAND and XOR gate.

(5+5+5)

10. a) Distinguish between Static Array and Dynamic array.
   b) Write a C program to copy the content of a text file "file1.txt' into another "file2.txt" into another "file2.txt".
   c) Write a C program to find the GCD of two numbers.

(5+5+5)

11. Write short notes on any three of the following:

(3X5)

   a) Dynamic memory allocation
   b) Pointer
   c) Storage Class
   d) Macro
   e) Two Dimensional Dynamic Array