Roll No. | | | | | | | | **Paper Code: TCS101**

B.Tech

End Semester Examination 2018

I *Semester*

Fundamental of Computer and Introduction to Programming

Time: Three Hours MM: 100

Note:

(i) This question paper contains two sections.

(ii) Both sections are compulsory.

Section – A

Q1. Find output of following codes. (1X 5 = 5 Marks)

a)
```
void main()
{
   int a=23,b=12,c=10,d;
   d=c+2 = b+1 =a;
   printf("%d%d%d%d",a,b,c,d);
}
```

b)
```
void main()
{
  int i;
  for(i=1; i<=5; i++)
   {
     case 1: printf("ONE");
     case 2: printf("TWO");
              break;
     case 3: printf("THREE");
     case 4: printf("FOUR");
              break;
    case 5: printf("FIVE");
   }
}
```

c)
```
void main()
{
  int arr[10]={3,5,7};
  printf("%d",arr[10]);
}
```

d)
```
void main()
{
   int a=2, b=6,c=0,x;
   x=a>(b>c?3:2)?6:7;
   printf("%d",x);
}
```

e)
```
void main()
{
   int y=-5;
   if(!!y)
   {
      printf("%d",!y);
   }
   else
   {
      printf("%d",y);
   }
}
```

Q2. Attempt any five parts. (3 X 5 = 15 Marks)

Block diagram of Computer

a) Compiler , interpreter, assembler
b) Cycle of 'C' program
c) Limitation of Array
d) Advantages of Flow-Chart
e) Calculate following expression and find the result
   4-5*6+8%3+6/4-9+3%5-7*2/3>4*5-6%8+7*2
f) Convert the following.
   I. $(245.23)_{10} = (\ )_2$
   II. $(101101.1010)_2 = (\ )_8$
   III. $(351.13)_8 = (\ )_{16}$

Section – B

Each question contains three parts a, b & c. Attempt any two parts of choice from each question.

Q3. (10X 2 = 20 Marks)

a. i. Differentiate Primary memory v/s Secondary Memory
   ii. Explain function of Operating System

b. Draw a flowchart to input a positive integer number. If that number is a single digit number then print double of that number, if that number is a two digit number then print the square of that number otherwise print half of that number.

c. Write a program to input a positive number and print it into words.
   sample input: 358
   sample output: three five eight

Q4. (10X 2 = 20 Marks)

a. i. Explain Computer network and topologies.
   ii. Differentiate Application Software v/s System Software.

b. Draw a flowchart to check whether an inputted year is a leap year or not. Also, check for century year.

c. Write a program to find the sum of the following series:
   $x - x^2/2! + x^3/3! - x^4/4! + \ldots\ x^n/n!$

Q5. (10X 2 = 20 Marks)

a. i. Differentiate Entry Controlled Loop and Exit Controlled Loop with an appropriate example.
   ii. Explain switch-case with suitable syntax. In which scenario switch case is not preferred, explain.

b. Draw a flowchart to input n elements in an array and find sum of the element which is stored at the odd index of the array.

c. Write a program to input n elements in an array and arrange that array in ascending order. Print the final array.
   sample input: Original array 7 4 9 2 10 5
   sample output: Final array 2 4 5 7 9 10

Q6. (10X 2 = 20 Marks)

a. i. Explain the need of break statement with example.
   ii. Consider an integer array Arr[10][8] having base address 2000. Calculate the address of the element Arr[7][4] of the array by Row Major and Column Major. (Consider an integer is reserving 2 bytes of space in memory).

b. Draw a flowchart to input elements into a matrix of size mXn. Find the average of the elements of principal diagonal.

c. Write a program to input elements into a matrix of size mXn. Find the largest element of any row inputted by the user.