B.Tech 2nd Semester End-Term Examination-2021

Name of Subject**: Introduction to Programming**

Paper code: **UCS12B10**

Full Marks: 50 Marks **Time: 2 Hrs**

[The figure in the margin indicate full marks for the question]

Instructions:

1] All questions are compulsory.
2] Calculators are not allowed.

Part A (Answer the following questions) **(10*1=10 marks)**

Q1. a) Why do we include<stdio.h> in our programs.
b) What do you mean by System Software?
c) Define Multitasking Operating System.
d) Differentiate EPROM and EEPROM.
e) Which gates are called Universal Logic gates and why?
f) How two-dimensional array represented in memory?
g) What are the main features of cache memory?
h) Explain the concept of making function call?
i) What is Array of strings?
j) Distinguish between the break and the continue statement.

Part B(Answer the following questions) **(2*10=20 marks)**

Q2.a) perform the following conversions: **(2*2=4)**

i) $(CAB2.21)_{16}$ to octal ii) $(11001001)_2 = ?_{16}$

b) Perform binary addition:11.11010+10101.0001+101.10110 **(3)**

c) Using 2's complement subtract $(60)_{10}$ from $(35)_{10}$ **(3)**

Q3.a) Write a short note on: Strcmp ( ). **(2+3+2+3=10)**

b) Differentiate call by value and call by reference.

c) Briefly state the function of Operating system in a computer.

d) What are the types of memories available in the computer system? How are they organized in the hierarchy?

Part C(Answer the following questions) **(1*20=20 marks)**

Q.4.a) Write a C program, using function, to find whether a number is even or odd. **(5)**

b) Write a program to read and display a 3x3 matrix. **(5)**

c) Write a program to calculate sum of square of first n numbers. **(5)**

d) What will be the output of the following program segments: **(5*1=5)**

i)
```
main ( )
{
        char str[20] = "ABCDEFGHIJK";
        int s = strlen(str);
        str[3] = '\0';
        s = strlen(str);
        printf("%d\n",s);
}
```

ii)
```
main( )
{
int x=2,y=3,z;
z=prod(x,prod(x,y));
printf("%d",z);
return0;
}
int prod(int x, int y)
{
 return(x*y);
}
```

iii)
```
main ( )
        {
        int a=0,b=0,c=0;
        a=++b + ++c;
        printf("%d %d %d",a,b,c);
        a=b++  + c++;
        printf("%d %d %d",a,b,c);
        }
```

iv)
```
main ( )
        {
int x=5,y=0,z;
        while(x>=0)
        {
        if(x= =y)
           break;
        else
          printf("\n%d%d",x,y);
         x--;
         y++;
       }
      }
```

v)
```
main ( )
{
if(printf("NITA"))
printf("I know c");
else
printf("I know c++");
}
```

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