B.Tech End Semester Examination 2019

II Semester

Fundamental of Computer and Introduction to Programming

Time: Three Hours

MM: 100

Note:
(i)   All questions are compulsory.
(ii) Answer any two sub questions among a, b & c in each main question.

Q1.a) Explain all the steps involved in generating the executable code for a C program stored in main c.

b) what will be the output of the following pseudo-code explain with the reason:-

i)	ii)
| ```c
#include<stdio.h>
int main()
{
    int a = -2;
    if( ! ! !a)
    {
        printf("ENTER");
    }
    else
    {
        printf("EXIT");
    }
    return 0;
}
``` | ```c
#include<stdio.h>
int main()
{
    int i;
    for(i=1 ; i<=5 ; i++)
    {
        switch(i)
        {
            case 1:  printf("ONE"); break;
            case 2:  printf("TWO");
            case 3:  printf("THREE");
            case 4:  printf("FOUR"); break;
            case 5:  printf("FIVE");
        }
    }
    return 0;
}
``` |
| iii) | iv) |
| ```c
#include<stdio.h>
int main()
{
    printf("%d", printf("Graphic Era"));
    return 0;
}
``` | ```c
#include<stdio.h>
int main()
{
    for(5 ; 2 ; 2)
        printf("HELLO");
    return 0;
}
``` |

c) Write a C code for drawing the following pattern.

```
   1
  2 3
 4 5 6
7 8 9 10
```

The value of n =4 for the above pattern, where n represents the number of rows and consider single space .

Q2.a) Explain the following with an example and correct syntax.
i) for loop v/s do while loop
ii) break v/s continue statement

b) Draw a flow chart to find the sum of each row of a matrix of size mXn.

c) Write a program in C to input n integer elements in an array and replace all the elements with their cubes which are placed at the odd index of an array.

Q3.a) What are keywords and identifiers? Give an example of at least 3 keywords and correct identifiers. Also, write the rules for writing the correct identifiers.

b)Draw a flowchart to input three sides of a triangle and print whether it's an equilateral, isosceles or scalene triangle.

c) Write a program to find the second smallest element of an array of n elements entered by a user.

Q4.a) Explain all available storage classes in C language with its scope, storage location, lifetime and default values.

b)Draw a flowchart to print the sum of the digit of a number using a recursive function.

c) Write a program in C to find the sum of the following series. Use a separate function to calculate the factorial.
$1!/1 + 2!/2 + 3!/3 + 4!/4 \ldots\ldots\ldots n!/n$

Q5.a) What is recursion? Write its types and usage with appropriate examples. Also, explain the activation record.

b) Write a note on the following:
i) Ring Topology with its advantage and disadvantages
ii) Syntax and working of conditional operators
iii) What is network? What are some important network hardware devices?
iv) Precedence and Associativity of operators

c) Write a program in C to find x^y using recursion.