Time: 11.30 AM – 1 PM   **Date: 27-02-2020**

[Instruction: Read the question first then attempt.]

Question 1 & 2 are compulsory. Attempt any two among 3, 4 and 5.

1) Pick appropriate outputs from the given options in question A and B, if the programs are run in gcc compiler. **If you choose the option 'compilation error', mention the reason for it.**

A)   [2.5]

```c
#include<stdio.h>
void main(){
    printf("%d",12+2*2-2==2/2);
}
```

Options
- a) 0
- b) 1
- c) 2
- d) Compilation Error

B)   [2.5]

```c
#include<stdio.h>
#include<string.h>
void main(){
    char s1[]="A", s2[]="B", s3[]="C";
    strcat(s1,s2);
    printf("%s%s",s1,s3);
}
```

Options
- a) AAC
- b) ABC
- c) ABB
- d) Compilation Error

C) If first string is "Hello" and second string is "World", then provide the output with short discription. [**Note:** No option given for this question]   [5]

```c
#include<stdio.h>#include<string.h>
void main(){
    char a[100],b[100];
    int i,j,k;
    printf("Enter the 1st string : ");
    scanf("%s",a);
    printf("Enter the 2nd string : ");
    scanf("%s",b);
    for(i=0;a[i]!='\0';i++);
    k=strlen(b);
    printf("%d\n",k);
    for(j=k-1;j>=0;j--){
                a[i] = b[j];
                i++;
    }
    a[i] = '\0';
    printf("The combined string is : %s \n",a);
}
```

D)   [2.5]

```c
#include <stdio.h>
void main(){
    int var =10;
    int *p;
    p= &var;
    *p=200;
    var++;
    printf ( "\n%d", var);
}
```

* Identify Formal and Actual Parameters.

E)

[2.5]

```c
#include<stdio.h>
int addition(int, int);
void main(){
    int a=10, b=20, c;
    c=addition(a,b);
    printf("%d",c);
}

int addition(int x, int y){
    int sum=x+y;
    return sum;
}
```

F) **NOTE:** ASCII value: 'A'-'Z': 65-90, 'a'-'z':97-122

[2.5]

```c
#include<stdio.h>
void main(){
    int a=100, b=15;
    b++;
    a+=b;
    printf("%c",a);
}
```

G)

[2.5]

```c
#include<stdio.h>
void main(){
    int i=10;
    while(i>=0){
        if(i==7){
            i--;
            continue;
        }
        printf("%d\t",i);
        i--;
    }
}
```

2) Explain insertion sort in detail using algorithm along with example.   [10]

3) Difference between compiler and interpretor?   [5]

OR

Draw a flowchart for finding factorial of a given number.   [5]

4) What is call by reference in C Programming? Explain with the help of example.   [5]

5) What is Recursion? Write a program for printing the factorial of a number using a recursive function.   [5]