ST. JOSEPH'S COLLEGE (AUTONOMOUS), BANGALORE-27
BCA - I SEMESTER
SEMESTER EXAMINATION: JANUARY - 2021
CA1318- PROGRAMMING IN C

Time- 2 1/2 hrs   **Max Marks-70**

PART A

ANSWER ALL THE QUESTIONS EACH CARRIES TWO MARKS   **2x 10 = 20**

1. a) The operators in a computer language (select the right statement)

   1) Represent the nouns in a language
   2) Represent the verbs in a language
   3) Stand for conjunctions in a language
   4) All these

1. b) Relational operators are used to

   1) To find the sum of two numbers
   2) To compare two values
   3) To assign a value to a variable
   4) To solve complex mathematical problems.

2. a) If A = 13; B = 25 ; The value returned by the expression (A == B) in C is

   1) 38
   2) 0
   3) -12
   4) 1

2. . b) what is the output?

```
   main()
{  int a,b,c;
 a = 0; b=1; c= a+b;
 while( c< 10){
printf("%d ",a);
a = b; b = c;
c = a + b;
}
1) 0 1 2 3 4 5
2) 0 1 3 5 8
```

3) 1 2 3 5 8 13

4) 0 1 1 2 3

3. a) S = 1 – X2/2! + X4/4! - ? What is the value of the next term of this series?

   1) X6/6
   2) X8/8!
   3) X6/6!
   4) X5/5!

3. b) X = 5; Y = 17;

  X = X + Y;

  Y = X – Y;

  X = X – Y; what is the values in X and Y after the execution of this code?

   1) 5, 17
   2) 22, 17
   3) 5, -12
   4) 17, 5

4) a) What does the following code fragment write to the monitor?

```
sum = 15;
if ( sum < 25 )
  printf("Under ");
else
  printf("Over ");
  printf("the limit.");
```

   1) Under
   2) Over
   3) Under the limit
   4) Over the limit

4.b) What is the output of this C code segment?

```
if( 10 > 9 )
     printf("Mangalore ");
else if(4%2 == 0)
     printf("Bangalore ");
     printf("Vizag");
```

   1) Mangalore
   2) Bangalore Vizag
   3) Mangalore Vizag
   4) Vizag

5. a) What is the output of this?

```
A= 20; B = 40;
if( A <= 20){
  printf("Hi   ");
```

```
}
if( B > A){
    printf(" There ");
}
```
1) Hi There
2) Hi
3) There Hi
4) There

5. b) What will be printed when the sample code above is executed?

```
int x = 0;
for (x=1; x<4; x++);
printf("x=%d\n", x);
```

1) X=0
2) X=4
3) X=5
4) X=3

6. a) What is the output of the following C program :

```
main()
{    int a[5]={2,3};
     printf("%d%d%d",a[2],a[3],a[4]);
}
```

1) Garbage value
2) 2 3 3
3) 0 0 0
4) 3 2 2

6. b) How many times will the printf statement will be executed ?

```
main( )
{    int i=3;
while( i >=0)
printf( "%d", i--);
}
```

1) 3
2) 4
3) Infinite
4) 0

7. a) The correct syntax to input value into the following data type:
     char S[30]

1) scanf("%c", S);
2) scanf("%s", &S);
3) scanf("%ld", S);
4) scanf("%s", S);

7. b) Which of the following is the correct answer as regards looping structure in C:

    1) while ( ){ }
    2) for ( ){ }
    3) do{   } while( );
    4) All the above.

8 a) The following code will:

```
int S=0; T=1;i=1;
for(i=1; i< 5; i++){
    S = S+ T;
    T = T + 1;
}
printf("%d", S );
```

    1) Finds the sum of 5 terms of a series.
    2) Finds the sum of first 4 terms of natural series.
    3) Finds the sum of of 5 terms of ODD series.
    4) Finds the sum of 4 terms of EVEN series.

8 b) **what is the output of the following code segment?**

```
S=1; T=1;
while ( T < = 8){
    T = T + 3;
    S = S + T ;
}
printf("%d ", S);
```

    1) 22
    2) 25
    3) 12
    4) 27

9. a) Choose a right C Statement.

    1) Loops or Repetition block executes a group of statements repeatedly.
    2) Loop is usually executed as long as a condition is met.
    3) Loops usually take advantage of Loop Counter
    4) All the above.

9. b) Choose a correct C Statement regarding for loop.

    for(; ;);

    1) for loop works exactly first time
    2) for loop works infinite number of times
    3) Compiler error
    4) None of the above.

10. a) What is the output of this program ?

```
int a = 25;
    while(a <= 28){
        a++;
        printf("%d ", a);
    }
```

1) 25 25 25
2) 26 27 28 29
3) 27 27 27
4) Compiler error

10. b) What is the output of this program ?

```
main ()
{   int a=32;
    do {
printf("%d ", a);
a++;
if(a > 35)
    break;
    }while(1);
}
```

1) No Output
2) 32 33 34
3) 32 33 34 35
4) Compiler error

PART B

ANSWER ANY FIVE QUESTIONS EACH CARRIES SIX MARKS   6 x 5 = 30

11. Write a program to print individual characters of string and print in reverse order and also display the length of the string. Let the Input string be   " c programming"

12. a) Write a program to print the below pattern using appropriate looping statements.

```
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1
```

b) What is type conversion? Show an example with suitable program.

13. Write a program to perform bubble sort by inputting n number of integers in an array.

14. Using switch statement, write a program to count the number of vowels by accepting a string.

15. a) Write a program to find the factorial of a number using recursive function.

b) Write a program to create auto variable (in which variable is declared) and   show how it is different from static variables declared as local and global variable.

16. Write program to read the contents of a file. Assume that, a file called   "data1.c" contains the following data "This is file program, Have you learnt it? Read this data using program.

17. Write a structure program that declares employees details with name, pin_code and salary with char, int and float data types respectively, Input five employees details and calculate the total salary for all the five employees and display it.

PART C

ANSWER ANY TWO QUESTION EACH CARRIES TEN MARKS   **2 x 10 = 20**

18. Show the difference between call by value and call by reference to accept two integers in main function and swap the integers by a function and display the result in main function.

19. Write a program to perform matrix multiplication.

20. Write a program that defines a function theory() and other function practical() and have some output statement in both the functions and show how these two functions can be nested within one other.