TUTORIAL-1

19CSE102 COMPUTER PROGRAMMING

ALL S1 B.TECH BATCHES

SUBMISSION DATE: 20-02-2020

Name:

Register Number:

Branch:

Batch:

1. If the following code snippet is given in the main program, what will be the output? Justify the output with your explanations.

```
printf("\n Result :%d\t%c\t%6.2f",12,'a',245.37154);
printf("\n Result :%5d\t%x\t%#x",234,234,234);
printf("\n Result :%-6d\t%06d\t%09.2f",1234,1234,123.456);
printf("\n%7.4f\n%7.2f\n%-7.2f\n%f\n%10.2e\n%11.4e\n%- 10.2e\n%e", 98.7654,98.7654,98.7654,
98.7654,98.7654,98.7654,98.7654,98.7654);
```

2. What is the output of the following code in main if the user enters the values
   Enter the values:
   2 3456.443 a 24.321E-2 1 12345678

```
int num;
float fnum; char ch; double dnum; short snum; long int lnum;
printf("\n Enter the Values");
scanf("%d%f%c %e%hd%ld",&num,&fnum,&ch,&dnum,&snum,&lnum);
printf("\n num=%d \n fnum=%f \n ch=%c \n dnum=%e\nsnum=%hd \n lnum=%ld",
num,fnum,ch,dnum,snum,lnum);
```

3. Which of the following is not a valid declaration in C? Choose the correct answer. Justify
   1. short int x;
   2. signed short x;
   3. short x;
   4. unsigned short x;

   (a) 3 and 4 (b) 2
   (c) 1 (d) All are valid

4. Escape Sequences: Predict the output

```
printf("stackoverflow\rnine");
printf("stackoverflow\nnine");
printf("stackoverflow\fnine");
printf("stackoverflow\fnine\fgreat");
```

5. unsigned char c = ‘a’; The decimal representation will be?

6. What is the output of the following code? Explain your answer.

```
#include <stdio.h>
int main()
{
        int i;
        printf(" short int is %2lu bytes \n",sizeof(short int));
        printf("                int is %2lu bytes \n", sizeof(int));
        printf("                int * is %2lu bytes \n", sizeof(int*));
        printf("                long int is %2lu bytes \n", sizeof(long int));
        printf("   long int * is %2lu bytes \n", sizeof(long int *));
        printf("   signed int is %2lu bytes \n", sizeof(signed int));
        printf("  unsigned int is %2lu bytes \n", sizeof(unsigned int));
        printf("\n");
        printf("          float is %2lu bytes \n", sizeof(float));
        printf("          float * is %2lu bytes \n", sizeof(float *));
        printf("          double is %2lu bytes \n", sizeof(double));
        printf("          double * is %2lu bytes \n", sizeof(double *));
        printf("long double is %2lu bytes \n", sizeof(long double));
        printf("\n");
        printf("signed char is %2lu bytes \n", sizeof(signed char));
        printf("char is %2lu bytes \n", sizeof(char));
        printf("char * is %2lu bytes \n", sizeof(char *));
        printf("unsigned char is %2lu bytes \n",sizeof(unsigned char));
        return 0;
}
```

7. Predict the output of following C program. Justify your answer.

```
#include <stdio.h>
int main()
{
        char a = '\012';
        printf("%d", a);
        return 0;
}
```

Choose the correct answer

(A) Compiler Error
(B) 12
(C) 10
(D) Empty

8. Assume that the size of char is 1 byte and negatives are stored in 2's complement form. Predict output

```
#include<stdio.h>
int main()
{
char c = 125;
c = c+10;
printf("%d", c); return 0;
}
```

(A) 135 (B) +INF (C) -121 (D) -8

9. What will be the output of the following code? Justify.

```
float f = 0.7;
if (f == 0.7)
        printf ("Optimist");
```

10. What will be the value of c?

```
signed char c = 127;
c = c+1;
```

11. Which data type is most suitable for storing a number 650000 in a 32-bit system?

12. What is short int in C programming?

13. In a C program, following variables are defined:

```
float x = 2.17;
double y = 2.17;
long double z = 2.17;
```

Write the correct way for printing these variables via printf.

14. What is the difference between variable declaration and variable definition in c?

15. In a party of N people, each person will shake her/his hand with each other person only once. On total how many hand-shakes would happen? Write a recursive function to implement this.

16. When is the “void” keyword used in a function?

17. How will you print “Hello World” without semicolon?

18. Difference between formal argument and actual argument?

19. Is it possible to have a function as a parameter of another function?

20. Which bitwise operator is suitable for checking whether a particular bit is ON or OFF? Explain with an example.

21. What is the default return value of a function?

22. How does exit ( ) and return ( ) differs?

23. Define what is a tail-recursive function, linear recursive function and binary recursive function using an example.

24. Write a recursive function to find the LCM of a number.

25. Write a recursive function to check if a number is prime or not.