1. Write a program to display a list of prime numbers up to 100.   5

2. Write a program to print the diamond pattern: 5

```
   *
  ***
 *****
  ***
   *
```

Jagannath University
Department of Computer Science and Engineering
B.Sc. in Computer Science and Engineering
Course Title: Structured Programming Language
Course Code: CSE-1101; Time: 50minutes; Marks: 10
Answer the following questions

1. What is function in C programming language? Differ between user defined function and built in function.   02

2. Write appropriate function prototypes for each of the skeletal outlines shown below. 02

(i)

b=0 (ii)

(iii)

```
main()
{
```

int a, b, c;

. . . .

. . . .

c=funct1(a, b);

. . . .

. . . .

```
main()
{
```

int a;

float b;

long int c ;

. . . .

. . . .

c=funct2(a, b);

. . . .

```
}
```

double a, b, c, d ;

. . . .

. . . .

c=funct3(a, b);

. . . .

d=funct4(a+b, a+c);

. . . .

3. What is recursion? Explain two features of it with proper example.   02

4. Distinguish between local variable and global variable with example.   02

Please Turn Over

5. Describe the output generated by the following program.

```
#include <stdio.h>

int functa ( int a);
int functb ( int b);

main()
{
        int a=0, b=1, count;

        for (count=1; count<=5;count++)
        {
                b=functa(a)+functb(b);      b= 0 +1
                printf("%d  ", b);
        }
}

int functa ( int a)
{
        int b;
        b=functb(a);
        return (b);
}

int functb ( int b)
{
        int c=1 ;
        c++;
        return(b+c);
}
```

Jagannath University
Department of Computer Science & Engineering
CSE-1101: Structured Programming Language
Midterm Examination

Total Marks-20

Time-1 hour

1. State whether the following statements are TRUE or FALSE: 2.5
   i. The main function is not mandatory in a C program.
   ii. A digit may not start a variable's name.
   iii. C is not case sensitive.
   iv. All comments are ignored by the compiler.
   v. Use of **goto** statement is encouraged in any programming language.

2. What is the difference between **while** and **do-while** loop?   2
3. What is the purpose of **break** and **continue**? Briefly explain.   3
4. What is **switch** statement used for? Write the structure of switch statement.   2
5. Find the errors, if any in the following program. Mention the type of each error in each   4
   line and also mentionhow to fix it.

```
1) Int a, b, float c = 0;
2) scafn ("%d%d",&a, c);
3) a= c++;
4) c= a%b
5) fi (a<c)
6) printf ("%d%d",a.b);
```

6. What will be the output of the following code snippet?   1.5

```
int x =2, y = 17, z = 11, result = 5;
result -= 2 * z % 13 + y / 3 + x;
printf("%d\n", result);
```

7. Write a program to print all prime numbers from 1 to 100.   5

Course Title: Structured Programming Language; Course Code: CSE-1101; Time:1 hour 10mins.

1. Define programming language. Explain function argument and parameter with example. 02

2. What is recursive function? Differ between built in function and user defined function. 02

3. Define local and global variable. Explain how else-if-else ladder is better than switch-case. 02

4. Write an executable program to compute the average height and age in cm unit and days unit of five (5) students respectively. Input will be taken feet-inch unit and Year-months-days unit. 02

5. Write down the output of the following code segments. 02

i.
```
for (i=10; i>5; i--)
    for (j=5;j<9;j++)
    {
        while (i+j>8)
        {
            printf("*");
        }
        printf("\n");
    }
```


ii.
```
for (pi=0; pi<5;pi++)
    for (qj=5;qj<9;qj++)
    {
        while (pi+qj<8)
        {
            data[pi][qj]=pi+qj;
        }
    }

for (pi=0; pi<5;pi++)
    for (qj=5;qj<9;qj++)
    {
        printf("%d ", data[pi][qj]);
    }
    printf("\n");
```