**NED UNIVERSITY OF ENGINEERING & TECHNOLOGY**

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

First Year, Midterm Examinations Fall 2023

*Time*: 90 minutes **Programming Fundamentals (CT-175)** **Max Marks: 20**

*Note*: Attempt all questions.

Q1. Write output of the following programs or list down error(s), if any [CLO-1, 5 Marks]

```
int main( )
{
 int i;
 while (i=10)
 {
   printf("\n%d",i );
   i=i+1;
 }
}
```

```
int main( )
{
 int a=500,b,c;
 if (a >= 400)
   b =300 ;
   c =200 ;
 printf("\n%d %d",b,c);
}
```

```
int main( )
{
  int x = 10 ;
  if ( x >= 2 ) then
 printf("\n%d",x);
}
```

```
int main( )
{
 char suite = 3 ;
 switch ( suite )
 {
  case 1 :
      printf ( "\nDiamond" ) ;
  case 2 :
      printf ( "\nSpade" ) ;
  default :
      printf ( "\nHeart") ;
 }
 printf ("\nI thought one wears a suite") ;
}
```

```
int main( )
{
  int a, b;
  a=-3 - - 3;
  b=-3 - -(- 3);
  printf("a=%d b=%d",
  a, b );
}
```

Q2. [CLO-1, 5 Marks]

a. **COMPARE** and explain the uses of break and continue statements. [2]
b. **DEFINE** the process of conversion of source code to executable in C language. [1]
c. **IDENTIFY** the difference between sequential & nested loop statements. Illustrate with examples. [2]

Q3. [CLO-2, 5 Marks]

Multiply all the digits of a number n by each other, repeating with the product until a single digit is obtained. The number of steps required is known as the multiplicative persistence, and the final digit obtained is called the multiplicative digital root of n. For example, the sequence obtained from the starting number 9876 is (9876, 3024, 0), so 9876 has a multiplicative persistence of two and a multiplicative digital root of 0. **WRITE** a C Program to for finding number persistency and multiplicative root of any positive integer n.

Q4. [CLO-2, 5 Marks]

**CREATE** a program considering the following:

a. Ask user to enter the number of lines for pyramid.
b. Ask user to enter any character to display in form of pyramid.
c. Check entered number of lines are odd and in case of even program end immediately.
d. Check entered character is valid character and in case of invalid character program ends immediately.
e. Repeat the program till user wants.