Objective:

- The purpose of this quiz is to focus on the very basic fundamental concepts learned so far in previous lectures.

Question No 1: **(3,1)**

A. Give output of the following code segment. In case of any error give reason.

```
void wow ()
{
        int & ref = * ( new int ) ;
        int * p = & ref ;
        * p = 90 ;
        cout << ref << endl << * p ;
}
```

Answer:

90
90
Memory Leakage Issue: An integer created on heap but not was not deallocated

B. Write the coding statements to create an alias, named as 'q' of identifier 'p' declared below.

```
int * * const p=0;
```

p is a constant pointer to non-constant pointer to integer non-constant

Question No 2: **(4)**

Write a function, which receives a character. If the received character is English Alphabet in upper case then the function return the equivalent lower case alphabet otherwise it returns same received character.

```
char convertToLowerCase( char ch )
{
    return ch >= 'A' && ch <= 'Z' ? ch+32 : ch;
}
```

Question No 3: **(5)**

Write a function, which repeatedly reads integers from the user, stopping only when the user enters -1, and returns the largest value input

```
int getLargestInputNumber()
{
   int num=-1, max=-1;
   do
   {
     if ( (num != -1 && max == -1) || num > max )
          max = num;

     cin >> num;
    }
    while( num != -1 );
    return max;
}
```

Question No 4: **(6)**

Hope you remember the following

```
struct Rational
{
        int numerator;
        int denominator;
};
```

Give definition of the following function:

void reduce(Rational & a)

This function modifies the received rational variables by reducing the numerator and denominator. For Example, if the received variable has 12/30 then this function change it to 2/5.

Discussed with you already in class right after the quiz.

Question No 5: **(6)**

Hope you remember the following

```
struct Time
{
        int hour;
        int minute;
        int second;
};
```

Give definition of the following function:

Void incMin(Time & t, int = 1); // increment in the minute of the received time variable

```
void incHour( Time & t, int hr = 1)
{
    t.hours = (t.hours+hr)%24;
}
void incMinutes( Time & t , int min = 1 )
{
    incHour( t ,(t.minutes+min)/60);
    t.minutes = (t.minutes+min) % 60;
}
```