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)**

What will display on console when following code segments will be executed?

```
void main()
{
      char * strLiteral = "hello";
      char arr[] = "Welcome BSSF14";
      strLiteral[1]='Y';
      arr[1]='Y';
      cout<<arr<<endl<<strLiteral;
}
```

The code will produce a runtime error because of following line

```
strLiteral[1]='Y';
```

Strange: Although, the data type of *strLiteral* allow us to change array contents pointed by him. We shall discuss this issue in class.

Question No 2: **(2)**

Consider the following function in which a 2-D array is created on heap, what you will write on left hand side to receive address of int[4][5]?

```
void    wow( )
{

        ……….int (*p)[5]…….. = new int [4][5];
}
```

Question No 3: **(1,1,1,2,1,3,1,1,1,1)**

Give output of the following code segment when executed? If there is an error then give reason for that error.

```
void display(int * p, int N)
{
    for ( int i=0; i<N; i++)
    {
        cout<<p[i]<<" ";
    }
}
void display(char * s)
{
    cout<<s;
}
int main()
{
    char char1D[10]="PAKISTAN";
        //assume &char1D[0] = 100
```

```
    char char2D[4][10] = {"hello","bye","wow","BSE"};
        //assume &char2D[0][0] = 110
    int int1D[4] = {1,2,3,4};
        //assume &int1D[0] = 140
    int int2D[3][4] = {{10,20,15,5},{56,23,45,12},{74,38,45,12}};
        //assume &int2D[0][0] = 236
    display(int1D,4);   cout<<"\n";
    display(int2D[1],3);   cout<<"\n";
    display(int2D[1],4);   cout<<"\n";
    display(int2D[0],12);   cout<<"\n";
    display(&int2D[1][2],6);   cout<<"\n";
    display(&int2D[1][2],10);   cout<<"\n";
    display(char2D[1]);   cout<<"\n";
    cout<<&int1D[2];   cout<<"\n";
    cout<<&char1D[5];   cout<<"\n";
    cout<<(void*)&char1D[0];   cout<<"\n";

    return 1;
}
```

```
1 2 3 4
56 23 45
56 23 45 12
10 20 15 5 56 23 45 12 74 38 45 12
45 12 74 38 45 12
45 12 74 38 45 12 1 2 3 4
bye
148
TAN
100
```

Question No. 4: **(8)**

Consider the following structures, which are used to store information regarding movies.

```
struct Date
{
        int day;        // 1 to 7
        int month;      // 1 to 31
        int year;       //e.g. 1989
};
struct Movie
{
        char title[100];
        char director[100];
        int runningTime;
        Date releaseDate;
        int rating;
};

struct MovieList
{
        Movie * list;           //points to an array of Movie structure
        int noOfMovies;         //number of movies in array pointed by list
        int capacity;           //size of array pointed by list
};
```

You are required to write the following function, which will display on console all the movie names/titles which have release date greater than or equal to given date 'd' and movie rating greater than equal to the given rating 'r'.

void **displayMovies** (MovieList & ml, Date d, int r)

```
/*
 returns 1:  d1 == d2
 returns 0:  d1 < d2    e.g 17-09-2014 < 01-08-2015
 returns -1: d1 > d2
 */
int compareDates ( Date  d1, Date d2 )
{
    if ( d1.year == d2.year && d1.month == d2.month && d1.day == d2.day
)
        return 1;
    if ( d1.year < d2.year)
        return 0;
    else if ( d1.year > d2.year)
        return -1;
    if ( d1.month < d2.month)
        return 0;
    else if ( d1.month > d2.month)
        return -1;
    if ( d1.day < d2.day)
        return 0;
    else if ( d1.day > d2.day)
        return -1;
    return -2;
}
void displayMovies (MovieList & ml, Date d, int r )
{
    int i=0;
    int dc;
    for ( int i=0; i<ml.noOfMovies; i++)
    {
        dc = compareDates( ml.list[i].releaseDate,d);
        if ( (dc==-1 || dc==1) && ml.list[i].rating >= r)
            cout<<ml.list[i].title<<"\n";
    }

}
int main()
{
    MovieList ml;
    ml.list = new Movie[5];
    Movie m = {"Problem Child","Asim",2014,45,Date{12,12,2014},5 };
    ml.list[0] = m;
    m = {"ABC EFG HIJ","Malik",2015,90,Date{1,3,2011},3 };
```

```
    ml.list[1] = m;
    m = {"BSEF14MA","Ahmed",2015,90,Date{25,10,2015},4 };
    ml.list[2] = m;
    ml.noOfMovies=3;
    ml.capacity = 5;
    displayMovies(ml, Date{1,12,2005}, 2);
    //cout<<compareDates(Date{12,12,2014},Date{13,12,2014});
    return 1;
}
```