Lab 8: Pointers

10:45 am to 12:45 pm

Total marks: 35

General instructions

- **No compensation or makeup lab**
- **Don't discuss with peers.**
- **Cheating cases will be given ZERO.**
- **You can ask only relevant queries from TAs.**
- **Strictly follow the instructions of TAs. Any misconduct will be dealt strictly.**
- **Complete your tasks by 11:45am. Last hour is reserved for evaluation**

Task 1 — 10 marks

Consider the following code.

```
#include <iostream>

using namespace std;

int main()

{

int var1 = 10, var2 = 5;

int* p1, * q1, * r1;

int var3;

var3 = ++var2;

p1 = &var1;

q1 = &var2;

r1 = &var3;

*p1 = var3++;

*q1 = ++var1;

//add appropriate lines of code to print the things mentioned in the table below

return 0;

}
```

Add the appropriate lines of code in the program given above. Print the following things and fill in the table. You need to submit following things:

1. Complete code .cpp file (used in printing addresses/values on the screen)

   The table needs to be filled with appropriate values and each value must be printed on the console. The addresses will depend on your system's memory allocation therefore addresses will vary from one machine to another. Any cheating attempt will be identified quickly.

Address of variable var1:
Address of variable var2:
Address of variable var3:
Address of pointer variable p1:
Address of pointer variable q1:
Address of pointer variable r1:
Value at location pointed by variable p1:
Value at location pointed by variable q1:
Value at location pointed by variable r1:
Value at location that is pointed by p1
Address of location that is pointed by p1

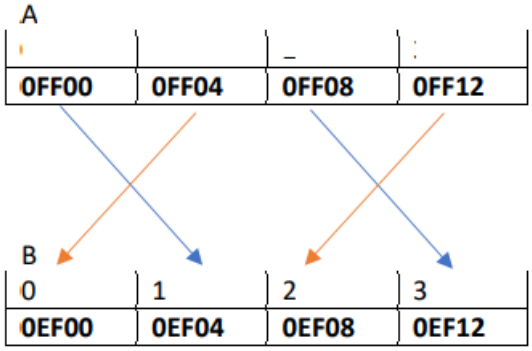
Task 2: 10+15 marks

Part (a)

In main(), write a logic that declares two arrays A and B with sizes as shown below. Array B will be of type int i.e. it stores integers.

Print the address of location of cells of both arrays.

Your next task is to create a following link between them. You can create a link / point locations to each other by using pointers concept. That is, A[0] is pointing towards B[1] and so on. At the end, display the contents of both the arrays.



Part (b)

1. Consider an array A (take input from user) consisting of some fixed number of integers.

2. Iterate through the array (w/o pointer) using a loop, find out and store the indices of elements that have even integers. The indices must be stored in another array B.
3. Declare an array of pointers C. The cells of this array should point to the respective entries of array A at indices specified in array B.