Practice 2

1. Consider the following statements:

```
int *p;
int i;
int k;
i = 42;
k = i;
p = &i;
```

After these statements, which of the following statements will change the value of i to 75?

A. k = 75;
B. *k = 75;
C. p = 75;
D. *p = 75;
E. Two or more of the answers will change i to 75.

2. Consider the following statements:

```
int i = 42;
int j = 80;
int *p1;
int *p2;
p1 = &i;
p2 = &j;
*p1 = *p2;
cout << i << j << endl;
```

What numbers are printed by the output statement?

A. 42 and then another 42
B. 42 and then 80
C. 80 and then 42
D. 80 and then another 80

3. What is printed by these statements?

```
int i = 1;
int k = 2;
int *p1;
int *p2;
```

```
p1 = &i;
p2 = &k;
p1 = p2;
*p1 = 3;
*p2 = 4;
cout << i;
```

A. 1
B. 2
C. 3
D. 4

4. What is printed by these statements?

```
int i = 1;
int k = 2;
int* p1;
int* p2;
p1 = &i;
p2 = &k;
p1 = p2;
*p1 = 3;
*p2 = 4;
cout << k;
```

A. 1
B. 2
C. 3
D. 4

5. Using pointers to call a function can be called as

A. call by value
B. call by reference
C. call by variable
D. all the above

6. The variable that contains address of another variable is called a

A. arrays
B. unions
C. None of the Above
D. pointers

7. Which of the following functions are used in dynamic memory handling in C++?

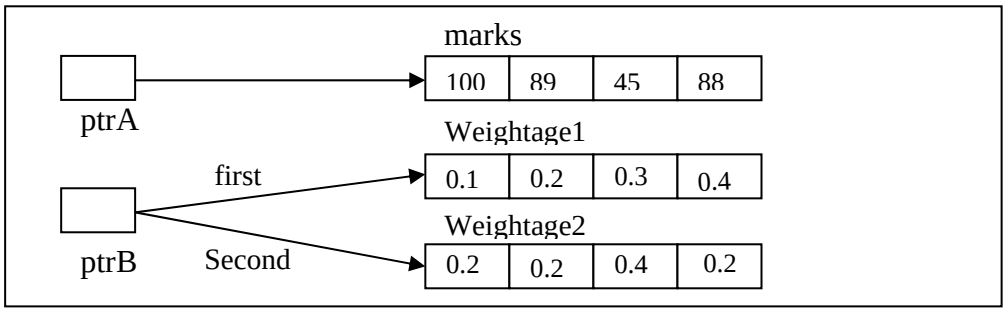
   A. new
   B. delete
   C. Both A and B
   D. None of the Above

8. Programming exercises.

   Based on some inputs from a teacher, who wants a program to calculate a weighted average of a student's exams marks. There are two set of weightages to be tried out. The weighted averages are calculated like, in the case of the first set:

   Weighted average = 0.1*100+0.2*89+0.3*45+0.4*88

   The diagram the teacher, who has a slight idea of pointers, drew is shown below:



   The pointers ptrA and ptrB are what are suggested by a seasoned programmer to you to write a program. Instead of using fixed variable names, the weightages are switched using pointers for different set of computations. For example to calculate the first set, the calculation is :

   ptrA(*ptrB)+*(ptrA+1)*(*(ptrB+1))+…. Using pointer notations all the way (Can we also use *(ptrA++)*(ptrB++) in a loop?)

   To calculate the second set, it would be:
   First get ptrB to point to the second weightage set
   Then do the same computation as above…

   Convert these ideas into a working program to use pointer notations in the calculation of the averages using the two sets of weightages.

   Since the computation codes for the two tasks are largely identical, try to cast the computation as a function which you can call from a

main function body. Think carefully what are the parameters you need to invoke this function.

Further improve the program to allow the teacher to enter the marks interactively before the computation is executed. Note that this step-wise improvement is commonly employed in software development.