## Write the following programs in C and check the results accordingly:

1. Write a program to print the odd and even numbers of an array.

2. Write a program that copies the elements of an array in reverse order to another array. At the end the program should be able to print both arrays.

3. Write a program that searches for duplicate numbers in an array. If the program finds duplication of numbers, it will print the index of those numbers and the numbers themselves as well.

4. Write a program that will take two arrays as input from users. Later your program needs to merge those arrays and will also sort the array in ascending/descending order.

5. Write a program which will take an array as input from user (or hard coded inside program), later it will take another two inputs: firstly, the position of an element and then the element. The position should be within the range of the size of the array. The new input will later replace the existing number in array at the index/position.

6. Write a program that prints the top three largest elements of an array.

7. Write a program that takes input of two matrices from user and later perform the addition of the two matrices printing in another resultant matrix.

8. Write a program that will take input of two matrices and perform the multiplication (dot product) of those matrices storing the result in another matrix. Before performing the multiplication, the two matrices need to go through a dimensionality check whether the matrices are of the size M X N = N X P; meaning the number of columns in the first matrix should be equal to the number of rows in the second matrix. User should be asked to input such matrices where the dimensionality match accordingly, and If the dimensionality does not match/user gives wrong dimensions willingly, the program will not try to perform the multiplication operation and hence will return before that.

9. Write a program that coverts a matrix to the transpose of that matrix. Transpose matrix means the elements in rows of the given matrix will go to the columns of the resultant matrix and vice versa for the elements of the columns.