**Assignment 2**

**(Based on Arrays)**

**Q1.** Write a C Program to Find the Number of Non Repeated Elements in an Array.

**Example**: **Input:**  elements of an array: 12 10 4 10 12 56

**Output**: Non Repeated Elements are: 12 10 4 56

**Q2**. Given an integer array, print k-th distinct element in an array. The given array may contain duplicates and the output should print k-th element among all unique elements. If k is more than number of distinct elements, print -1.

**Examples:**

**Input** : Input : arr[] = {1, 2, 50, 10, 20, 2},

k = 3

First non-repeating element is 1

Second non-repeating element is 50

Third non-repeating element is 50

Output : 10

**Q3**: Given an array of size n, find out the smallest number that is repeated exactly ‘k’ times where k > 0? Assume that array has only positive integers.

**Examples:  
Input** : arr[] = {2 2 1 3 1}

k = 2

**Output**: 1

**Explanation:**

Here in array, 2 is repeated 2 times, 1 is repeated 2 times, 3 is repeated 1 time

Hence 2 and 1 both are repeated K=2times and min (2, 1) is 1.

**Q4:** Write a program to swap minimum and maximum elements in an array.

**Example Input Array**: 45 10 18 5 2 10 12

**Output Array**: 2 10 18 5 45 10 12

**Q5**: Find length of the subsequence of a given sequence in which the subsequence elements are in sorted order, lowest to highest, and in which the subsequence is as long as possible. This subsequence is not necessarily contiguous, or unique.

**Example Input Array**: {10, 25, 9, 30, 21, 55, 40, 60, 75}

**Output Array**: Here Length of LIS is 6 and LIS could be [10,25,30,40,60,75] and [10,25,30,55,60,75].

**Q6**: Find Union and Intersection of 2 sorted arrays

**Q7**: Print a Square Matrix in Spiral Form



**Output: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16**

**Q8: Predict the output the following c codes:**

**1**: #include <stdio.h>

int main()

{

char a[2][6] = {"hello", "hi"};

printf("%d", sizeof(a));

return 0;

}

**2:** #include <stdio.h>

int main()

{

int a[][] = {{1,2},{3,4}};

int i, j;

for (i = 0; i < 2; i++)

for (j = 0; j < 2; j++)

printf("%d ", a[i][j]);

return 0;

}

**3**: #include "stdio.h"

int main()

{

  int i = 1, j;

  for ( ; ; )

  {

    if (i)

        j = --i;

    if (j < 10)

       printf("GeeksQuiz", j++);

    else

       break;

  }

  return 0;

}

**Q9:** Given the following definitions (along-with initialization) of 2D arrays, which of the following are correct?

* int array2D[2][4] = {1,2,3,4,5,6,7,8};
* int array2D[][4] = {1,2,3,4,5,6,7,8};
* int array2D[2][] = {1,2,3,4,5,6,7,8};
* int array2D[][] = {1,2,3,4,5,6,7,8};

**Q10**: What is right way to Initialize array?

A. int num[6] = { 2, 4, 12, 5, 45, 5 };

B. int n{} = { 2, 4, 12, 5, 45, 5 };

C. int n{6} = { 2, 4, 12 };

D. int n(6) = { 2, 4, 12, 5, 45, 5 };

**Q11**: What will be the output of the program ?

#include<stdio.h>

void main()

{

int a[5] = {5, 1, 15, 20, 25};

int i, j, m;

i = ++a[1];

j = a[1]++;

m = a[i++];

printf("%d, %d, %d", i, j, m);

}

A. 3, 2, 15

B. 2, 3, 20

C. 2, 1, 15

D. 1, 2, 5

**Q12**: The library function used to find the last occurrence of a character in a string is

A. laststr()

B. strstr()

C. strnstr()

D. strrchr()

E. None of these

**Q13**: What will be the output of the program if the array begins at address 65486?

#include

void main()

{

int arr[] = {12, 14, 15, 23, 45};

printf("%u, %u", arr, &arr);

}

A. 65486, 65488

B. 65486, 65490

C. 65486, 65487

D. 65486, 65486

E. None of these