C++ Assignments Solution’s. Selection and insertion sorting.

1. Which of the following is true about selection sort:
   a) In each iteration we find the minimum element in the unsorted part of the array.
   b) In each iteration we find the index of the minimum element in the unsorted part of the array.
   c) We swap the index of the minimum element with the first element of the array.
   d) It takes O(n^2) swaps.

ANSWER → a) In each iteration we find the minimum element in the unsorted part of the array.

2. Which of the following examples represent the worst case input for an insertion sort?
   a) array in sorted order
   b) large array
   c) normal unsorted array
   d) array sorted in reverse order

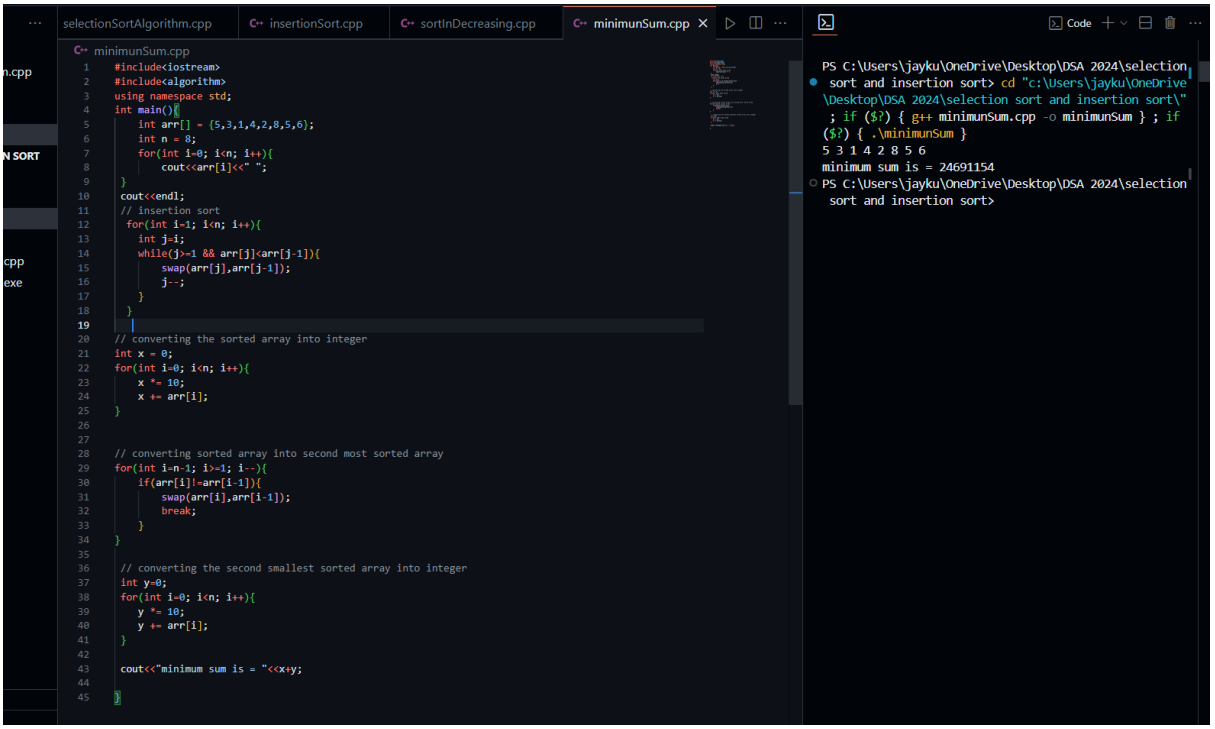
ANSWER→ d) array sorted in reverse order

3. How many passes would be required during insertion sort to sort an array of 5 elements?
   a) 1
   b) Depends on order of elements
   c) 4
   d) 5

ANSWER→ 4.

4. Given an array of digits (values are from 0 to 9), the task is to find the minimum possible sum of
   two numbers formed from digits of the array. Please note that all digits of the given array must be
   used to form the two numbers.

ANSWER →



5. Given an array of strings arr[] with all strings in lowercase. Sort given strings using Bubble Sort
   and display the sorted array.

ANSWER→

sortArrayString.cpp

```cpp
#include<iostream>
#include<string>
#include<algorithm>
using namespace std;
int main(){
  string arr[] = {"jayvardhan","akshar","jini","vidhan","vi
  int n = 6;
  for(int i=0; i<n; i++){
    cout<<arr[i]<<endl;
  }
     // bubble sort
    for(int i=0; i<n-1-i; i++){
            for(int j=0; j<n-1; j++){
                if(arr[j]>arr[j+1]){
                   swap(arr[j],arr[j+1]);

                }
            }
    }
    cout<<endl;
    for(int i=0; i<n; i++){
    cout<<arr[i]<<endl;
  }
}

```

```
sertion sort> cd "c:\Users\jayku\OneDrive\Desktop\DSA 202
              cd "c:\Users\jayku\OneDrive\Desktop\DSA 2024\select
ion sort and insertion sort\" ; if ($?) { g++ sortArrayString.cpp
 -o sortArrayString } ; if ($?) { .\sortArrayString }
jayvardhan
akshar
jini
vidhan
vidhi
khushi

akshar
jayvardhan
jini
khushi
vidhan
vidhi
PS C:\Users\jayku\OneDrive\Desktop\DSA 2024\selection sort and in
sertion sort>
```