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**Section :- CS3-2**

**Q 1**

```
#include<iostream>
```

```
using namespace std;
```

```
int main() {
```

```
    int n = 5;
```

```
    int a[n];
```

```
    // Take input for the array
```

```
    cout << "Enter 5 elements of the array: " << endl;
```

```
    for (int i = 0; i < n; i++) {
```

```
        cin >> a[i];
```

```
    }
```

```
    cout << "Unsorted Array: " << endl;
```

```
    for (int k = 0; k < n; k++) {
```

```
        cout << a[k] << "\\t";
```

```
    }
```

```
    cout << endl;
```

```
    cout << "Insertion Sort in Descending Order" << endl;
```

```
    // Insertion Sort in descending order
```

```
    for (int i = 1; i < n; i++) {
```

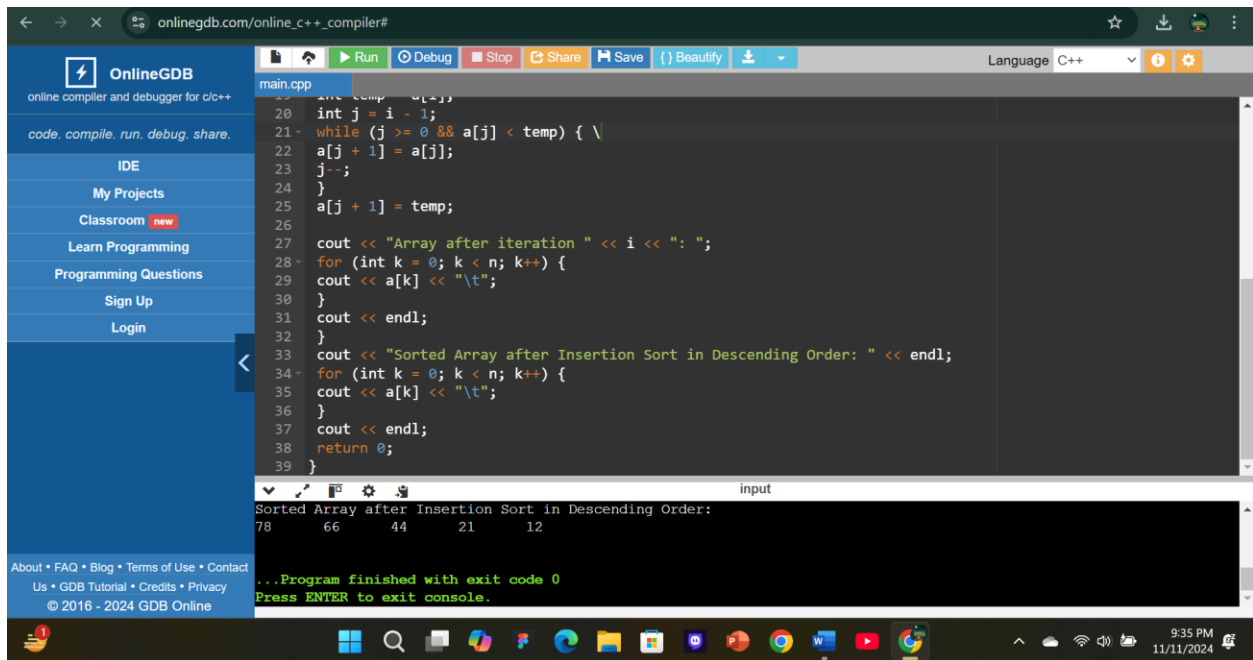
```
        int temp = a[i];
```

```
int j = i - 1;
while (j >= 0 && a[j] < temp) { \
a[j + 1] = a[j];
j--;
}
a[j + 1] = temp;

cout << "Array after iteration " << i << ": ";
for (int k = 0; k < n; k++) {
cout << a[k] << "\t";
}
cout << endl;
}

cout << "Sorted Array after Insertion Sort in Descending Order: " << endl;
for (int k = 0; k < n; k++) {
cout << a[k] << "\t";
}
cout << endl;

return 0;
}
```



Q 2

```
#include<iostream>
```

```
using namespace std;
```

```
int main() {
```

```
    int n = 9;
```

```
    int a[n];
```

```
    cout << "Enter 9 elements of the array: " << endl;
```

```
    for (int i = 0; i < n; i++) {
```

```
        cin >> a[i];
```

```
    }
```

```
    cout << "Unsorted Array:" << endl;
```

```
for (int i = 0; i < n; i++) {
```

```
    cout << a[i] << " ";
```

```
}
```

```
cout << endl;
```

```
cout << "Bubble Sort" << endl;
```

```
for (int i = 0; i < n - 1; i++) {
```

```
    for (int j = 0; j < n - i - 1; j++) {
```

```
        if (a[j] > a[j + 1]) {
```

```
            int temp = a[j];
```

```
            a[j] = a[j + 1];
```

```
            a[j + 1] = temp;
```

```
        }
```

```
    }
```

```
cout << "Array after pass " << i + 1 << ": ";
```

```
for (int k = 0; k < n; k++) {
```

```
    cout << a[k] << " ";
```

```
}
```

```
cout << endl;
```

```
}
```

```

cout << "Sorted Array after Bubble Sort is: " << endl;

for (int i = 0; i < n; i++) {

    cout << a[i] << " ";

}

cout << endl;


return 0;

}

```

The screenshot shows the OnlineGDB web interface. The left sidebar contains navigation links: OnlineGDB, code, compile, run, debug, share, IDE, My Projects, Classroom (new), Learn Programming, Programming Questions, Sign Up, and Login. The main editor displays a C++ program for Bubble Sort. The code includes a function to swap elements and a main function that performs the sorting and prints the result. The output console at the bottom shows the sorted array: 6 9 12 22 23 44 65 66 78. The program finished with exit code 0.

```

main.cpp
27
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46
47

```

```

    }
}

cout << "Array after pass " << i + 1 << ": ";
for (int k = 0; k < n; k++) {
    cout << a[k] << " ";
}
cout << endl;
}

cout << "Sorted Array after Bubble Sort is: " << endl;
for (int i = 0; i < n; i++) {
    cout << a[i] << " ";
}
cout << endl;

return 0;
}

```

input

```

Sorted Array after Bubble Sort is:
6 9 12 22 23 44 65 66 78

...Program finished with exit code 0
Press ENTER to exit console.

```

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