



Department of Electrical Engineering  
Mid Term Examination Summer 2020

Subject: Programming Fundamentals

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22 / 08 / 2020

Max Marks:

1.
  - a) Give 3 reasons why it's important to comment your code. What are the 2 different ways to comment code in C++ and how are they different? (2 Marks)
  - b) What are the two different commands used to output a new line in C++? (2 Marks)
  - c) Show the difference between IF-ELSE and nested IF condition? (2 Marks)
  - d) What is a nested loop? Give a nested FOR loop example and the exact number of times the loop will run. (2 Marks)
2. Write a program (starting from #include) that asks the user for numbers 10 times, after the numbers have been entered, PRODUCT of all the numbers should be displayed. During the program if a positive number is entered it should continue and ask for another number, if a negative number is entered the program should end and output the PRODUCT of all the positive entries. A sample run should appear on the screen like the text below. (12 Marks)

```
Enter a number: 3
Enter a number: 10
Enter a number: 2
Enter a number: -213
The product of all your positive numbers is 60
```

3. The program below is supposed to compute the average of two numbers. The program compiles without error, but does not correctly compute the average. (5 Marks)

```
#include <iostream>
using namespace std;
void main() {
int total=0;
cout<<"Enter a number: ";
int a;
cin>>a;
total = total + a;
cout<<"Enter another number: ";
int b;
cin>>b;
total = total + a;
double average = total / 2;
cout<<"The average is "<<average<<"\n";
}
```

- b) What is the output of the following code? (5 Marks)

```
#include <iostream>
using namespace std;
void main(){
int i = 0;
for(i=1; i<19; i++){
for(int j=1; j<2; j++){
i = i-3;
cout<<i<<endl;
}
}
cout<<"Final Answer is = "<<i<<endl;
}
```



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Date: 22/3/2020

Sir wazir:

Q1

Part a

Computer Programming, or comment is a programmer-readable explanation or annotation in the source code of a computer program. They are added with the purpose of making the source code easier for humans to understand, and are generally ignored by compilers and interpreters.

or

(b) The new line character `\n` can be used as an alternative to ending the back slash (`\`) is called an special character and indicates a special character using a single cout statement with as many instances of `\n`

P.T.O

as your program requires  
will print out multiple  
line of text.

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Q1

① Nested if-else statement  
The if-else statement execute  
two different codes depending  
upon whether the test expressions  
is true or false. The  
nested if-else statement  
allows you check for multiple  
test expressions and execute  
different codes for more than  
two conditions.

---

Q1 d)

Nested loop means a loop  
statement inside another loop.  
That why nested loop are  
also called as "loop inside loop"

Example:

```
for (i = 0; i < Row; i++) {
    for (j = 0; j < Col; j++)
        cout << matrix[i][j]
        cout << "\n";
}
```

Q2

```

#include <iostream>
using namespace std;
int main()
{
    int a[10];
    int temp;
    int counter = 0;
    int answer = 1;
    for (int i = 0; i < 10; i++)
    {
        cout << "enter number" << i + 1 << " : ";
        cin >> temp;
        if (temp >= 0) {
            a[i] = temp;
            counter++;
        }
        else {
            break;
        }
    }
    for (int j = 0; j < counter; j++)
    {
        answer = answer * a[j];
    }
    cout << answer;
    return 0;
}

```

4

Q3

①

```

#include <iostream>
using namespace std;
void main () {
int total = 0;
cout << "Enter a number: ";
int a;
cin >> a;
total = total + a;
cout << "Enter another number: ";
int b;
cin >> b;
total = total + b;
double average = total / 2;
cout << "The Average is " << average << "\n";
}

```

Q3

Answer

out put ⇒ 32767

End