Q1) True/ False

State whether each of the following statements is TRUE or FALSE.

ASCII is a popular code used to represent characters, it uses 10 bits to represent *
each character.

- ● False
- ○ True

In C++, the operands of modulus (%) operator must be integers or floats. *

- ○ True
- ● False

C++ is a high-level programming language. *

- ● True
- ○ False

The result of evaluating the expression *static_cast<int>(static_cast<char>(75))* is *
75.

○ False

⦿ True

Suppose that *x = 15*, After the statement *y = x ++;* executes the values of x and y *
are same and equals to 16.

⦿ False

○ True

The modem is a component in the computer responsible for converting *
alternative Current (AC) to Direct Current (DC)

○ True

⦿ False

The motherboard is an electronic circuit board which holds and interconnects the *
hardware together, and provides connectors for other peripherals.

○ False

● True

A language translator is used to perform the source code translation into the *
object code.

○ False

● True

Ahmad'sTotalAverage isn't legal identifier in C++ and the reason for that its length *
is more than 8 characters.

● False

○ True

*

The C++ statement:

int c = 'Y';
is considered as type casting.

● False

○ True

The C++ increment operator ++ is a binary operator. *

○ True

● False

The result of evaluating the expression (3.2 + 5 /2 %3) is 5.2. *

○ False

● True

Pseudocode follows strict lexical rules when forming an algorithm. *

○ True

◉ False

Creating IPO charts is part of the problem analysis step. *

◉ True

○ False

cout << 5+6*2; will print 22. *

○ True

◉ False

Division by zero causes syntax error. *

○ True

◉ False

It is easy for programmers to discover errors in a program written using machine *
languages.

○ True

◉ False

All programming languages have the same vocabulary and rules (i.e. syntax). *

◉ False

○ True

A storage device is a case that contains the electronic components of the *
computer that are used to process data.

○ True

◉ False

*

The expression: $\dfrac{a^3+2b}{3c}$ can be translated to C++ expression as follows: *a*a*a + 2*b / 3*c.*

◉ False

◯ True

Q2) Valid/Invalid

Determine whether the following C++ code segments are valid or invalid

int a = 4, b = 4; *

a= a++ % ++b;

- ⦿ Valid
- ◯ Invalid

cout << "This "Final" Exam is easy!"; *

- ◯ Valid
- ⦿ Invalid

const int x=10; *

cout<<x++;

- ( ) Valid
- (●) Invalid

int m = 1, n = 2, a = 3; *

m = 2 * A;

- ( ) Valid
- (●) Invalid

int Main=55;   *

  cout<<Main*10;

- (●) Valid
- ( ) Invalid

int x=5, y=7, z=9; *

cout >> z;

○ Valid

◉ Invalid

int x,y;   *

cin>>x>>y>>endl;

○ Valid

◉ Invalid

cin>>"Palestine@2023"; *

O Valid

● Invalid

---

int a,b;   *

cin >> a-b;

O Valid

● Invalid

---

int x='*';   *

 cout<<x++;

● Valid

O Invalid

Q2) Multiple Choices

Choose the **best** answer:

Software with objective of making a printer device functional when it is connected *
to the computer is called:

- ○ Virtual Machine
- ○ Utility Software
- ○ Application Program
- ● Driver

_____ is considered as both input and output device. *

- ○ Microphone
- ● Touch screen
- ○ Scanner
- ○ Keyboard

What will be printed? *

int x=5, y=4;

cout<<++x*9/--y+5;

○ 6

○ 16

○ 18

◉ 23

What will be printed? *

x=15/3+14%25/3*4;
cout<<"X="<<x;

○ X=36

◉ X=21

○ X=8

○ X=5

What will be printed? *

int a=10, b=2, c=3;

b=a;

a=c;

cout<<c<<'\t'<<a<<'\t'<<b;

○ 3   3   2

○ 3   3   10

◉ 3   2   3

○ 3   3   11

_____ is a network that covers a large geographical area. *

○ Large Area Network.

○ Metropolitan Area Network.

◉ Wide Area Network.

○ Wireless Area Network.

Which of the followings is correct? *

○ (75)10 + (10111)2 = (63)16

○ (65)10 = (100001)2

○ (11)8 > (11)10

● (777)8 = (1FF)16

The C++ compound expression **X *= A/B-3;** is equivalent to the standard C++ *
assignment:

● X = X * (A / B - 3);

○ X = X * (A / B) - 3;

○ None of the other choices

○ X = X * A / B - 3;

What will be printed? *

int No=38;

cout<<No%10;

No=No/10;

cout<<No%10;

○ 3.8

○ 8.3

○ 38

● 83

How many Kilobytes are there in 512 bytes? *

○ None of the choices

● One half KB

○ 2 KB

○ 1 KB

(678)16 is: *

◉ Larger than (678)10

○ Equal to (1101001001)2

○ Smaller than (678)8

○ There is no such a number

What will be printed?   *

float x;

char y='B';

x=static_cast<float>(y);

cout<<showpoint<<y<<" "<<x;

○ 66.0 66.0

◉ B   66.0

○ 66.0 B

○ B   66

Which part of computer stores data temporarily? *

◉ Main Memory

○ ALU

○ CU

○ CPU

What will be printed?   *

char ch1='A', ch2='E';
cout<<++ch1<<" "<<ch2--;

○ E   B

○ 66   69

◉ B   E

○ 69   66

The file containing the statements written by programmer in a specific language *
to solve a problem is called:

○ None of the choices

● Source code

○ Object code

○ Machine code

The network model in which any computer can request resources from any *
computer and any computer can serve any other one in the network is:

○ None of the choices

● Peer to Peer network.

○ Client Server network.

○ Web Service Model.

The number $(7567)_8$ is also equals: *

- ○ $(F77)_{16}$

- ○ $(111101110111)_2$

- ⦿ All of the choices

- ○ $(3959)_{10}$

Implementation step, in SDLC, is: *

- ⦿ The process of transforming the program logic design into a computer language format.

- ○ Discovering errors in the program.

- ○ Ensuring that program meet the users requirements.

- ○ Also called debugging process

What will be printed? *

`cout<<"\"c++\"\tis great";`

- ● "c++" is great
- ○ \"c++\" is great
- ○ \c++\is great
- ○ \c++\ is great

Which of the following topologies makes use of a special device called hub? *

- ○ Bus
- ○ Mesh
- ● Star
- ○ Ring

Q4) General Question:

What is the evaluation of the following C++ expression? *

Show your work.

```
cout << 9 * (7 / 4) % 5 - 8 * 7 % 12 - 2 << endl;
```

9*(1)%5 - 56 %12 -2 ==> 4 - 8 - 2 = -6

What is the output of the following C++ segment? *
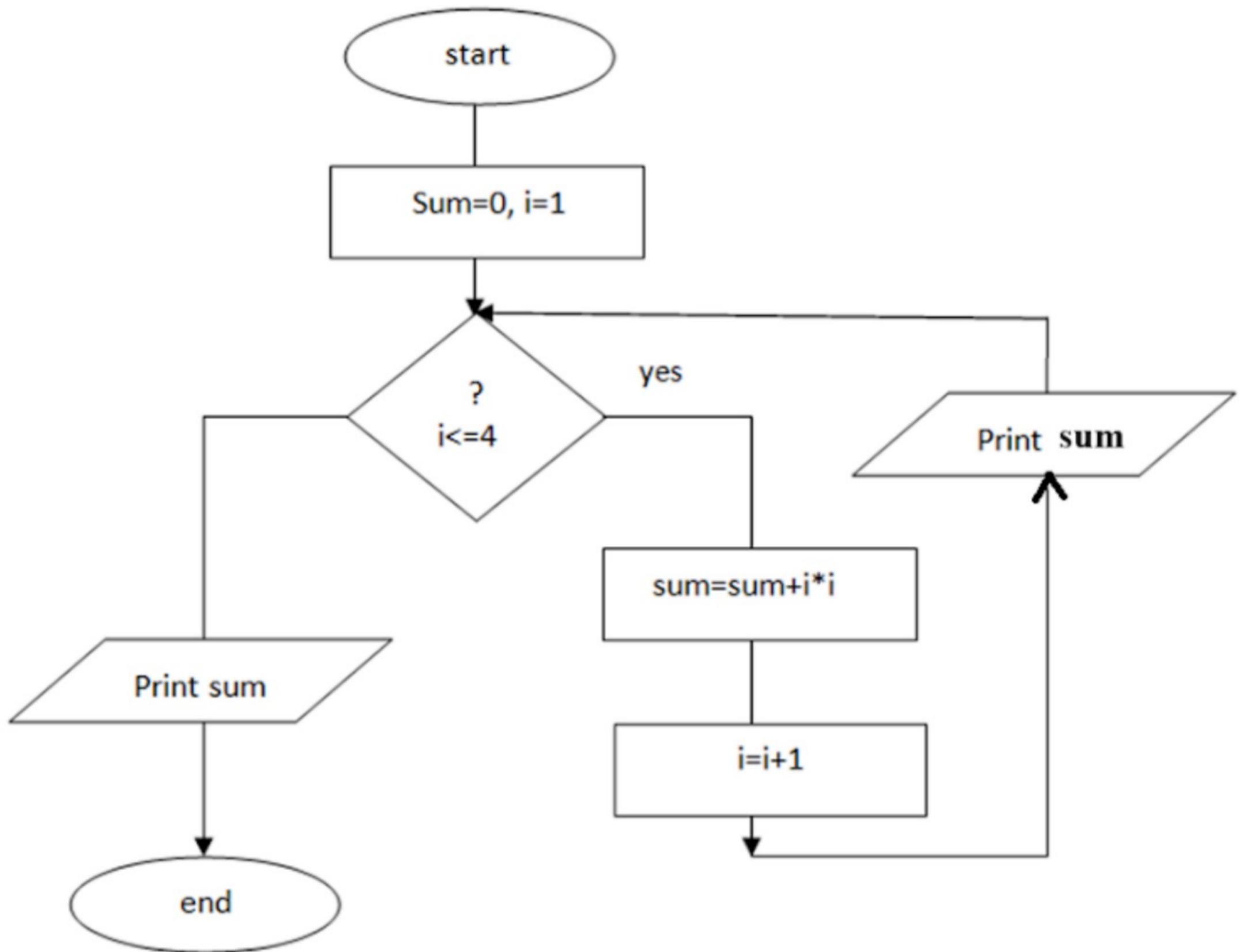
int a, b, c;

a = 100; b = 200;

a++;

c = a++ + --b;

cout<<"a = "<<a<<" "<<"b = "<<b<<" "<<"c = "<<c<<endl;

a = 102 b = 199 c = 300

Trace the following flowchart and print the final output.

Show your work.

(<= means less than or equal)

the output respectively from i = 1 up to 4 ==> sum = 1 , 5 , 14 , 30
and the final output to the sum = 30

Q5) General Question:

Draw a **flowchart** for the algorithm that reads the grades of a class of 45 students. It will calculate and print the average of this class. The algorithm should also calculate the number of students whose grades are above 87. If the class average is above 83.0, then print "Excellent Class!".

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