



Attempt *all* the following questions:

Question 1:

(4 Marks)

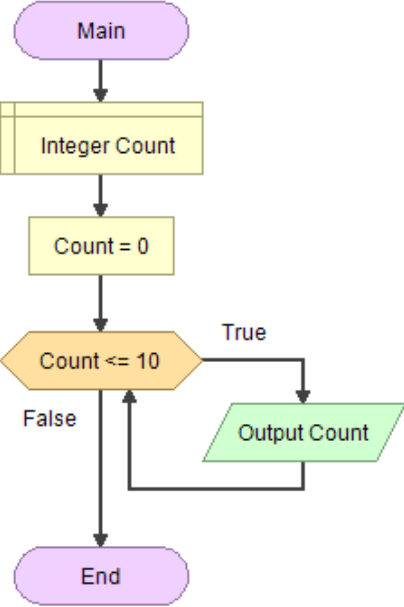
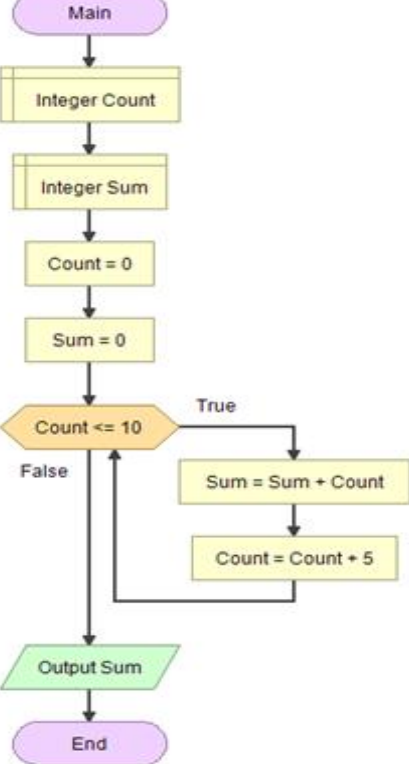
Write a complete C++ program that asks the user to enter the integer lengths (in centimetres) of the dimensions of a box that will hold gum drops. The program should then display the volume of the box in cubic centimetres.

[Hint: $\text{Volume of a box} = \text{length} * \text{width} * \text{height}$]

Question 2:

(4 Marks)

Determine the output of the following flowcharts:

a) (2 Marks)	b) (2 Marks)
 <pre> graph TD Main([Main]) --> IC[Integer Count] IC --> C0[Count = 0] C0 --> D1{Count <= 10} D1 -- True --> OC[/Output Count/] OC --> D1 D1 -- False --> End([End]) </pre>	 <pre> graph TD Main([Main]) --> IC[Integer Count] IC --> IS[Integer Sum] IS --> C0[Count = 0] C0 --> S0[Sum = 0] S0 --> D2{Count <= 10} D2 -- True --> S1[Sum = Sum + Count] S1 --> C1[Count = Count + 5] C1 --> D2 D2 -- False --> OS[/Output Sum/] OS --> End([End]) </pre>
<p>Answer</p>	<p>Answer</p>



Attempt *all* the following questions:

Question 3:

(3 Marks)

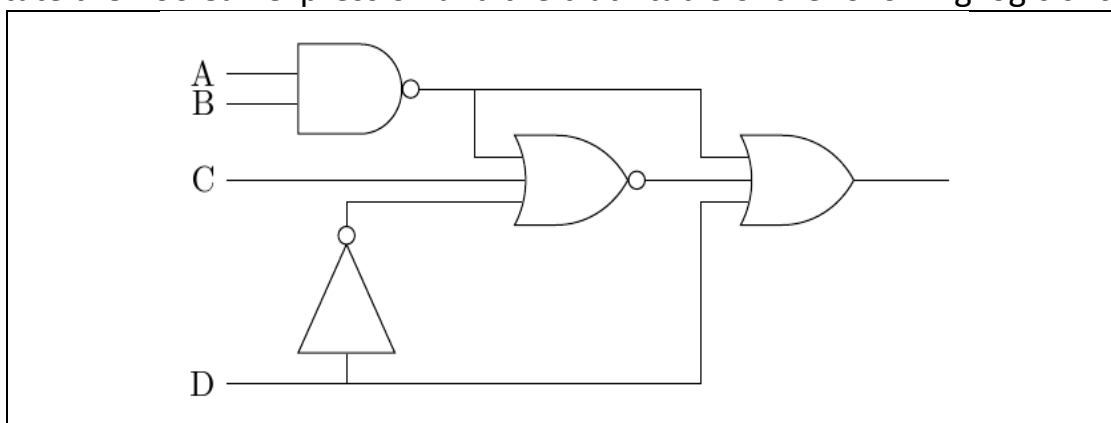
Choose the best answer:

1. A bar code reader is an example of a(n)
(a) processing device (b) output device (c) storage device (d) input device
2. A is a printer that uses a pen that moves over a large revolving sheet of paper.
(a) plotter (b) printer (c) Multifunction Printer (d) Scanner
3. The first step in the machine cycle is
(a) fetch (b) execute (c) decode (d) store
4. The value $(101011)_2$ in a decimal system is
(a) 43 (b) 42 (c) 44 (d) A4
5. The value $(245)_8$ in a decimal system is
(a) 165 (b) 101100101 (c) 69 (d) A5
6. The value $(74)_{10}$ in a hexadecimal decimal system is
(a) 104 (b) 740 (c) 4A (d) A4

Question 4:

(4 Marks)

State the Boolean expression and the truth table of the following logic circuit:



Good Luck
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