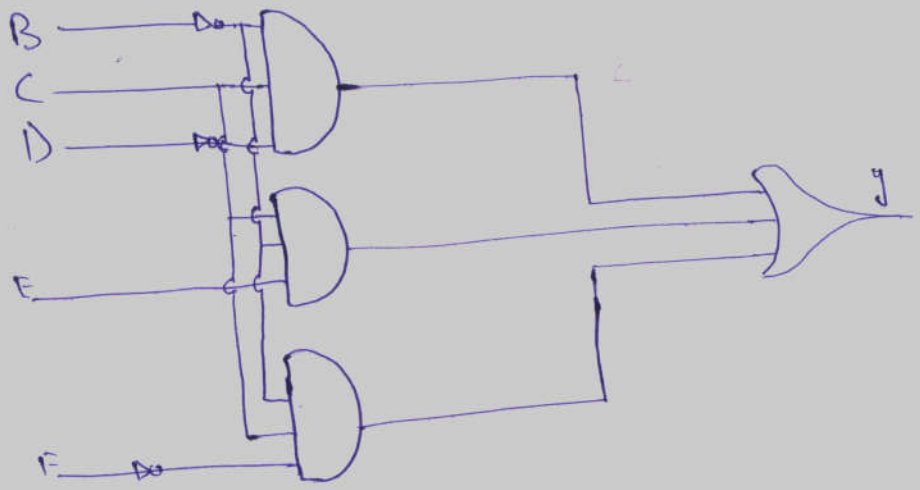
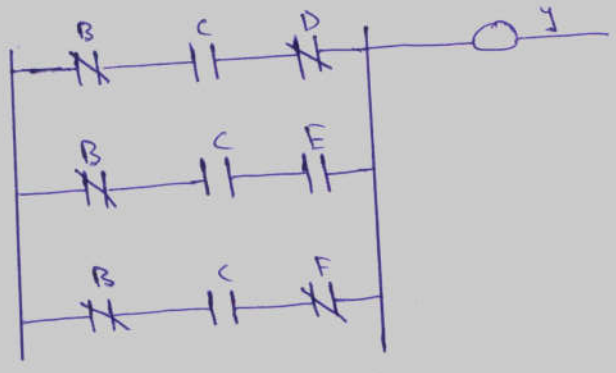
$M = B'CD' + B'CE + B'CF'$





B is off
C is ON
D is off
B is off
C is ON
E is ON
B is off
C is ON
F is off

Q3

A] Describe a draw ladder diagram for the below given process having a container infused with liquids A and B in order when start is pressed when it reaches the set level. mix the two liquids evenly then open the valve to let out the mixture?

Ans PLC Ladder Practice Problem:

Automatically infusing the container with liquids A and B in order when start is pressed when it reaches the set level. mix the two liquids evenly then open the valve to let out the mixture.

Number of PLC Inputs Required.

X1 - Start Switch
X1 - Low level float sensor. X1 = on when the liquid level reaches X1.
X2 - High level float sensor. X2 = on when the liquid level reaches X2.
X3 - Stop Switch
X10 - EMERGENCY STOP buttom. X10 = ON when the buttom is Pressed.

Number of PLC outputs Required

Y0 - Liquid A Inlet
Y1 - Liquid B Inlet
Y2 - Mixture outlet
Y3 - Agitator / Stirrer

Number of PLC Timer Required

T0 - 60 second Timer. 100ms Time Base (See K60 Preset value for Timer)
T1 - 120 second Timer, 100ms Time Base (See K1200 Preset val. for Timer)

http://plc-scada-dcs:blogspot.com/2013/12/basic-plc-ladder-programming-training_9518.html#axzz3zDMdpZyB

Ladder Program Description:

- X0 = ON when START is pressed. Y0 will be ON and latched, and the valve will be opened for infusing liquid A until the level reaches the low-level float sensor.

- X1 = ON when the level reaches the low-level float sensor. Y1 will be ON and latched, and the valve will be opened for infusing liquid B until the level reaches the high-level float sensor.

- X2 = ON when the level reaches the high-level float sensor. Y3 will be ON and activates the agitator. Also, timer T0 will start to count for 60 sec. After 60 sec, T0 will be ON, and the agitator motor Y3 will stop working. Y2 will be ON and latched, and the mixture will drain out of the container.

- When Y2 = ON, timer T1 will start to count for 120 sec. After 120 sec, T1 will be ON and Y2 will be OFF. The draining process will be stopped.

- When an error occurs, press EMERGENCY STOP button X10. The NC contact X10 will be ON to disable all the outputs. The system will then stop running.

Department of Electrical Engineering Spring 2020.

Industrial Electronics Assignment

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Q1 Multiple choice Questions

① This is inconclusive the reasion is decreases.

② (c) opening a manually operated high-voltage disconnect switch.

③ (d) Fourth

④ (a) Reducing

⑤ (b) Transducer

Q2 A Draw digital logic circuit and ladder diagram that is equivalent to the following Boolean function that will initiate a motor "M" to start?

$M = B'C\,D' + B'C\,E + B'C\,F'$