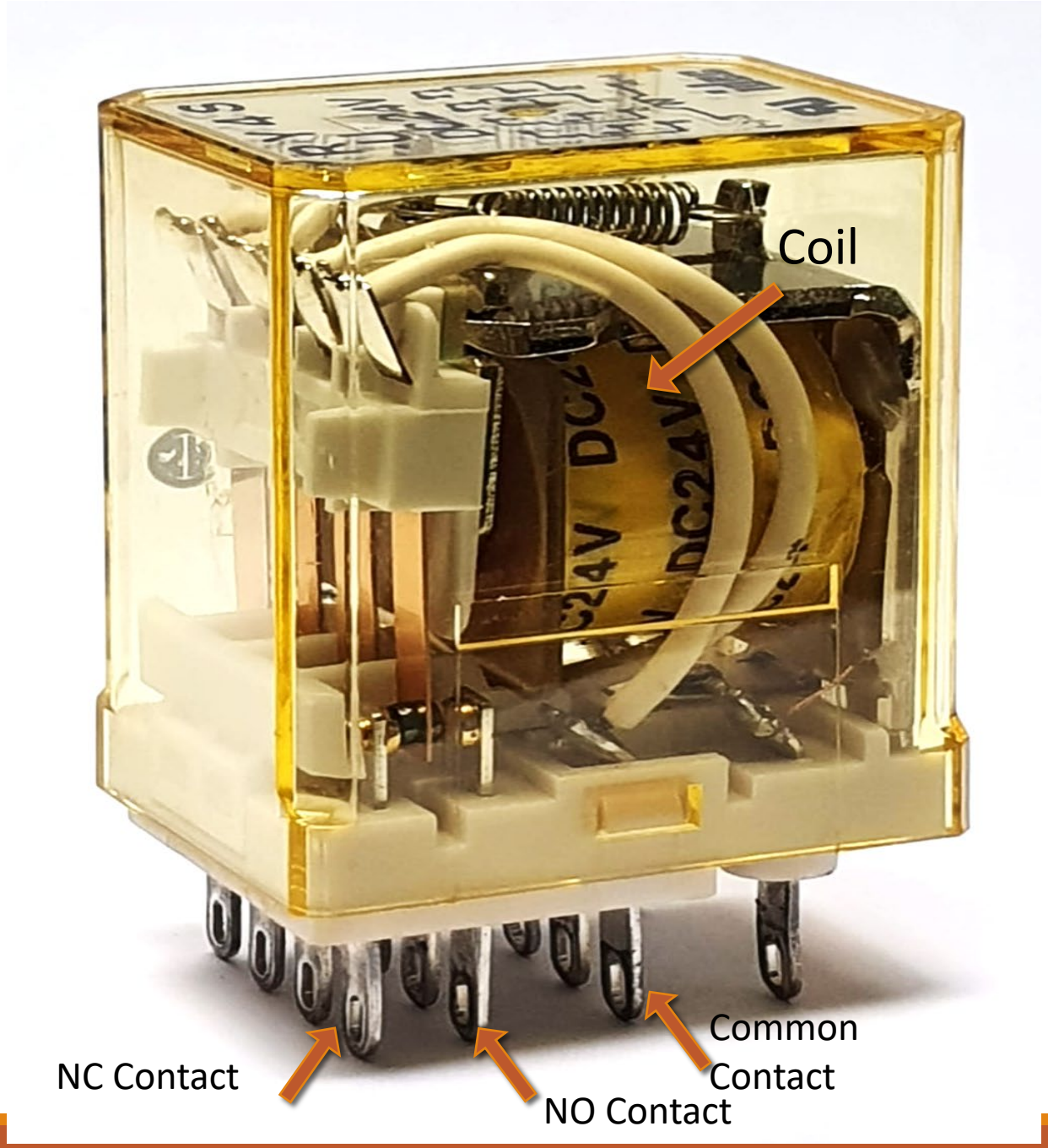
Tutorial 1

ET0917 / ET0817 / ET0832

RELAY FUNDAMENTALS MCQ

How many sets of contacts does this relay have?

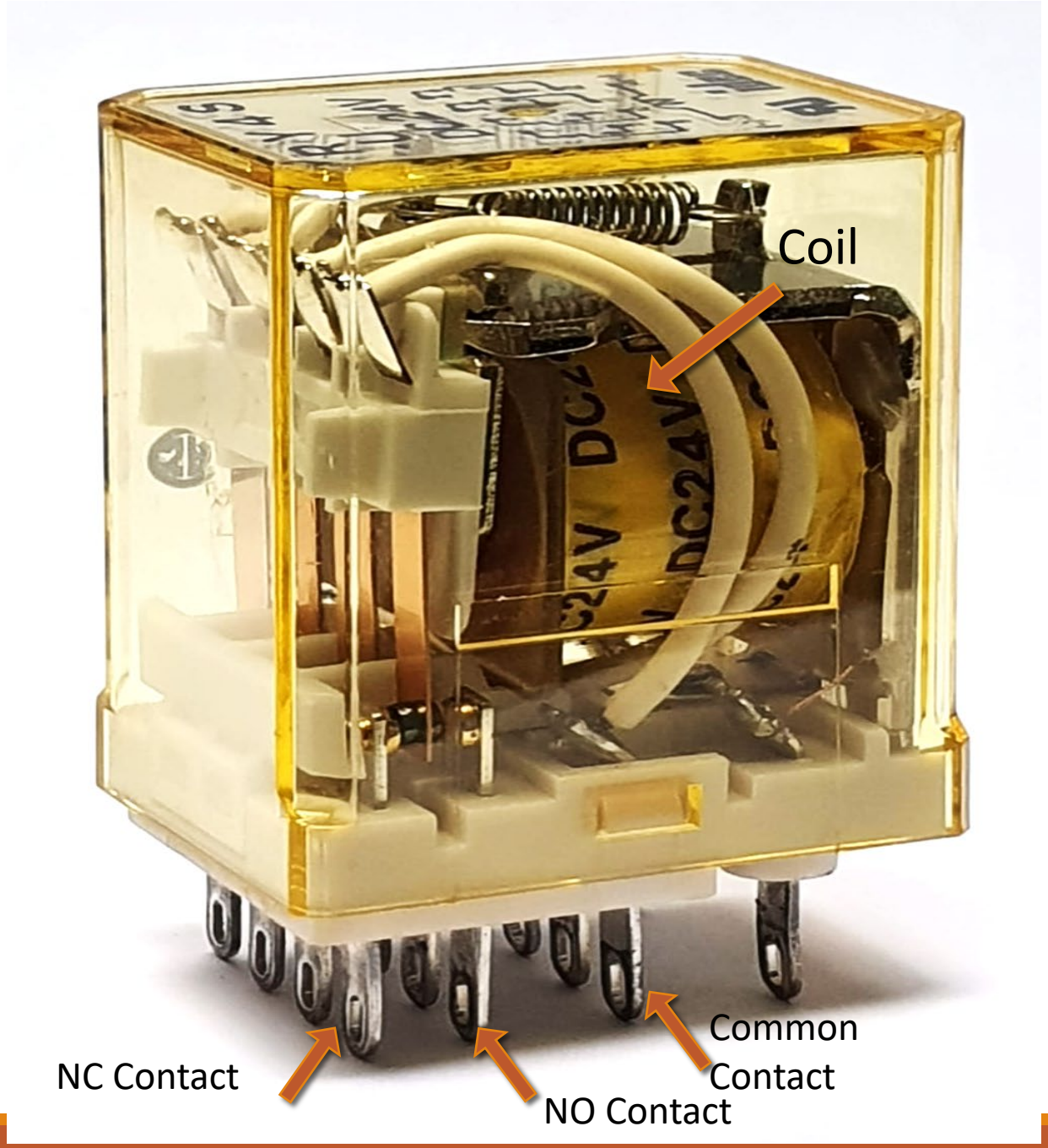
a) 1
b) 2
c) 3
d) 4



RELAY FUNDAMENTALS MCQ

This relay is also known as _____ relay.

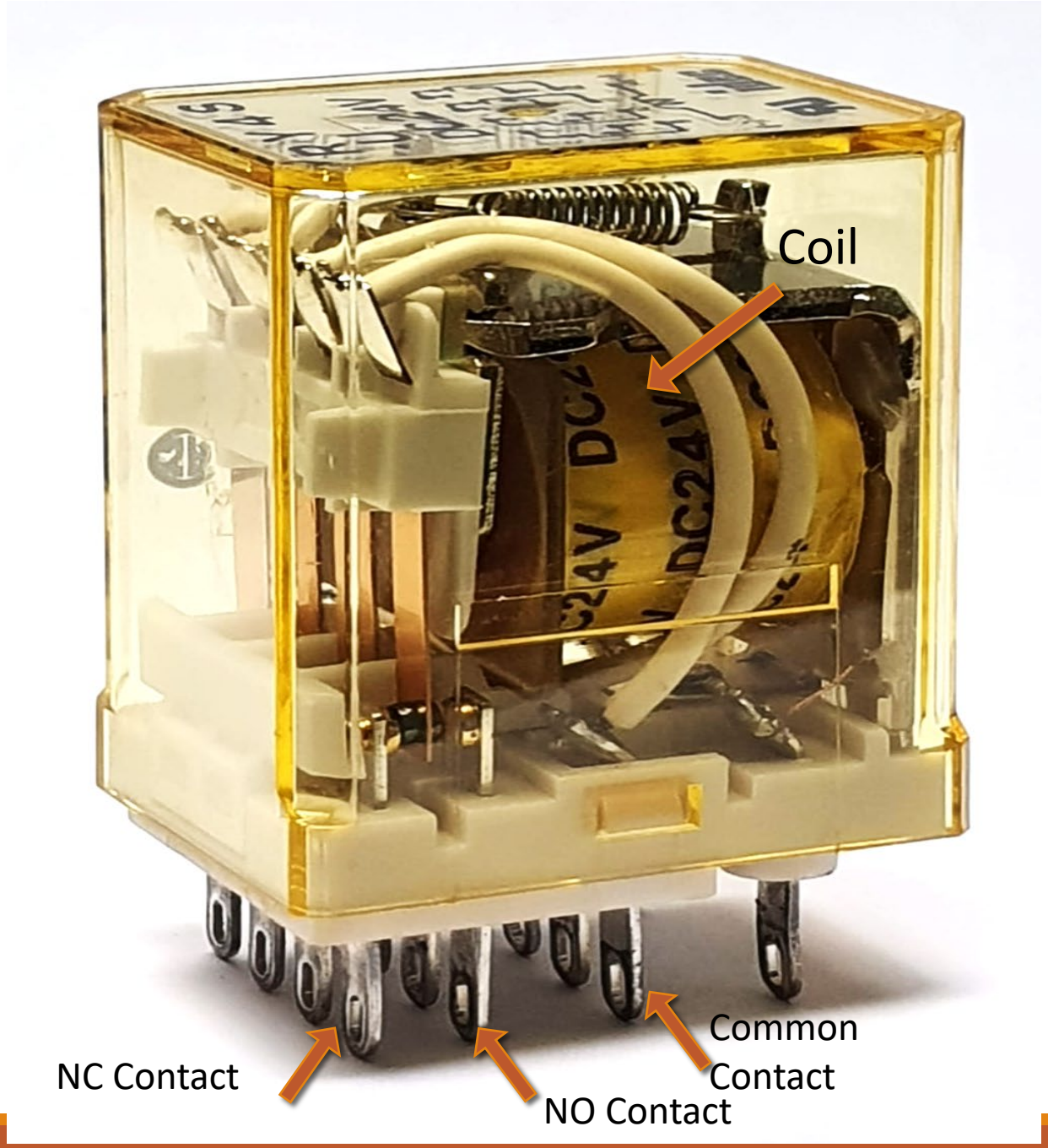
a) SPDT
b) DPDT
c) 4PDT
d) Solid State



RELAY FUNDAMENTALS MCQ

What is the operating voltage for this relay?

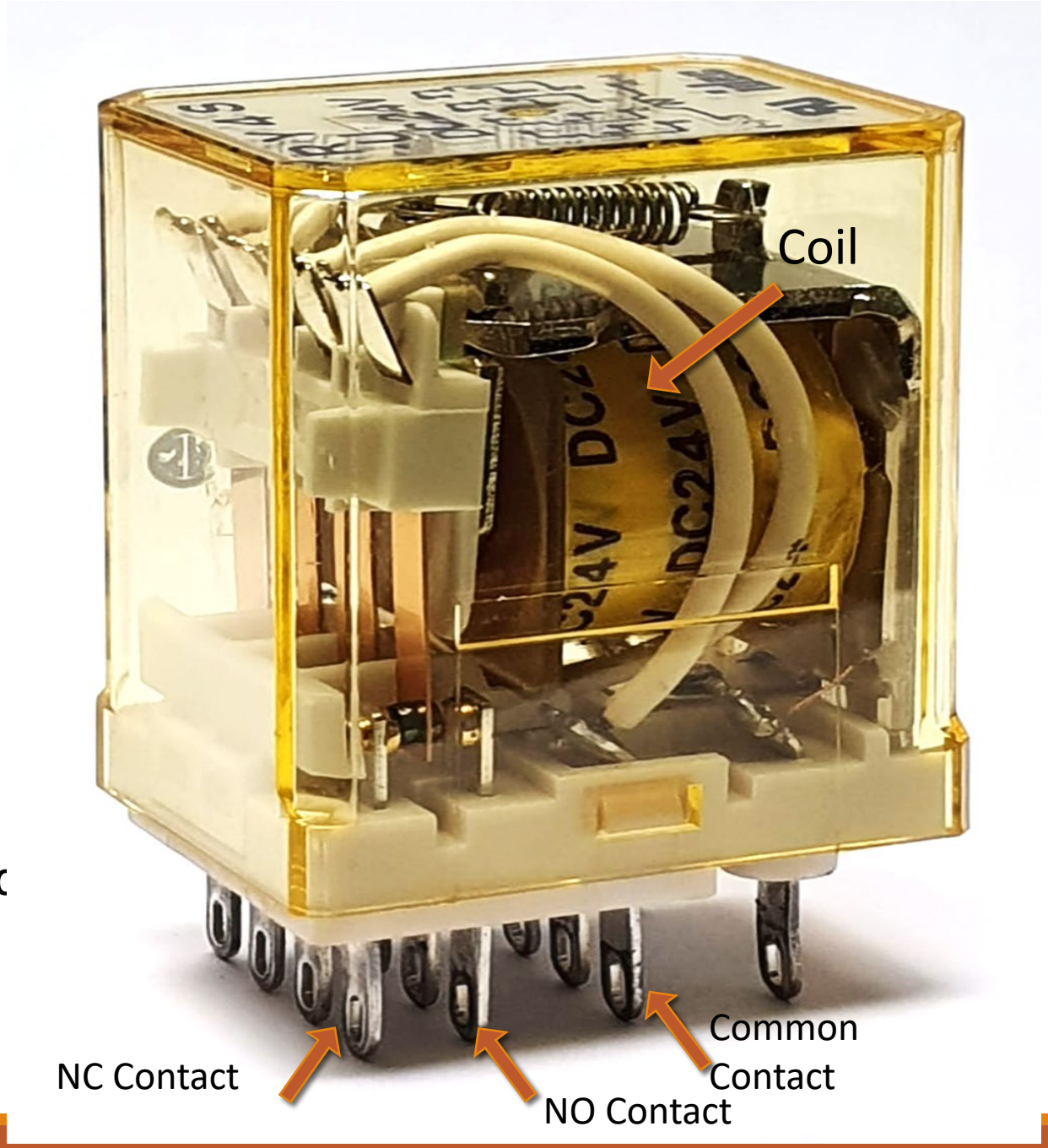
a) 5 Vdc
b) 24 Vdc
c) 24 Vac
d) 230 Vac



RELAY FUNDAMENTALS

- What is an electromechanical relay?
- How does a relay work?
- Why do we need a relay?
- How to select a relay?

In a few words, answer what you understanc
(You could submit more than 1 answer)



Q1 - MCQ

The main purpose of inventing PLC is to _____ Hardwired Relay Logic.

a) replace
b) understand
c) simulate
d) test

Q2 - MCQ

Ladder programming make sense as they are almost _____ to Hardwired Relay logic. Therefore widely understood by technicians and control engineers.

a) real

b) replace

c) identical

d) virtually

Q3 - MCQ

If the PLC logic needs to be changed, it can be achieve through programming, without _____ at all.

a) intervention

b) software

c) replacement

d) rewiring

Q4 - MCQ

In PLC ladder diagram, all inputs, sensors, and internal relay contacts, are represented as “contacts”  , and all outputs are represented as “_____”.

a) relays

b) coils

c) software

d) ladder

Q5 – MCQ

Which of the following is NOT considered as benefit of PLC:

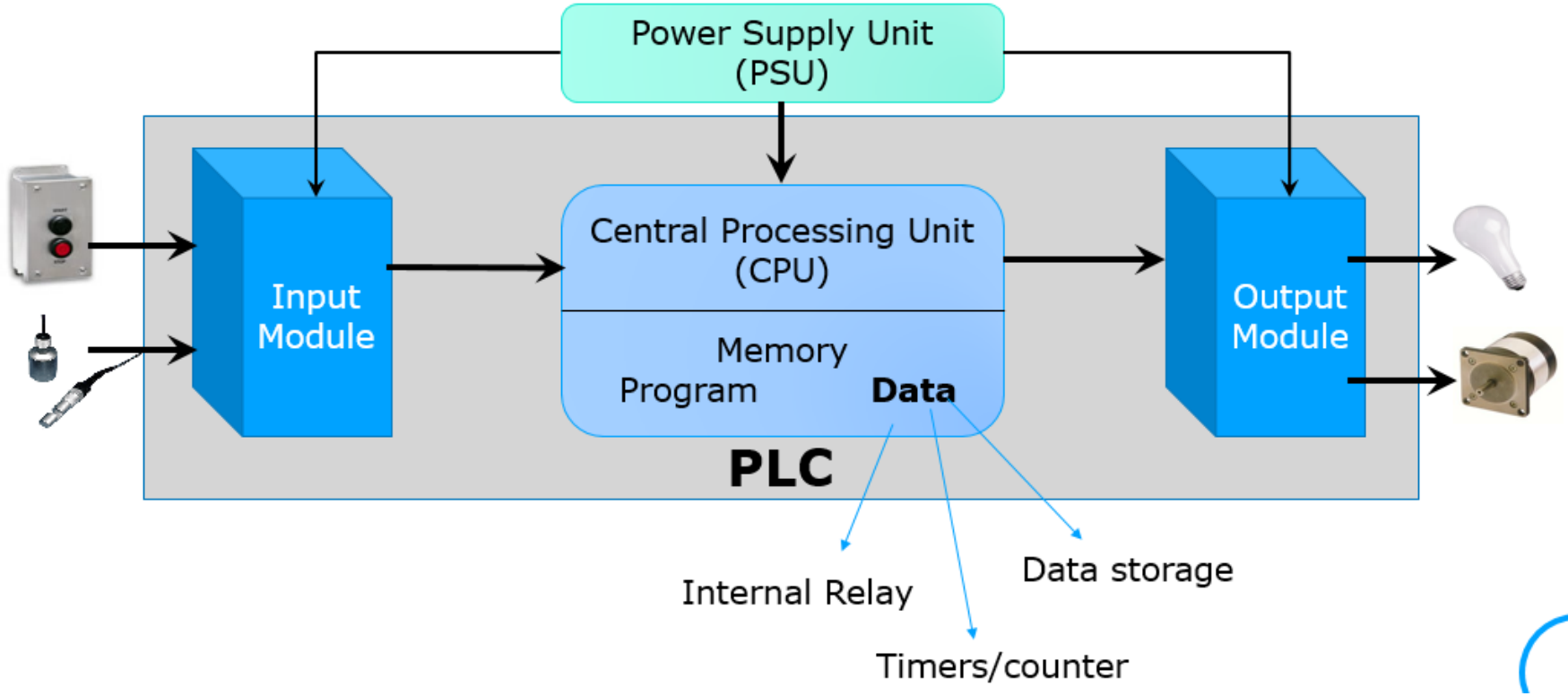
a) Ability to handle multiple inputs and outputs with small footprint
b) Suitable for industrial environment with electrical noise and vibration
c) Provide control using wired relay logic
d) Ease of changing logic

Q6 – MCQ

Select the correct sequence of PLC Scan Cycle

a) Read Outputs -> Update Inputs -> Execute Program
b) Read Inputs -> Execute Program -> Update Outputs
c) Execute Program -> Read Inputs -> Update Outputs
d) Read Inputs -> Update Outputs -> Execute Program

Q7 – Word



Why do we say that PLC has infinite number of relays, counters & timers?

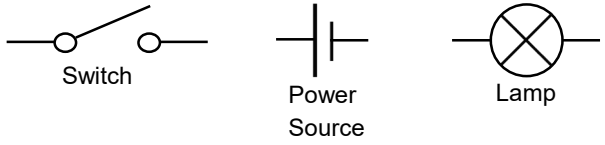
In a few words, answer what you understand.

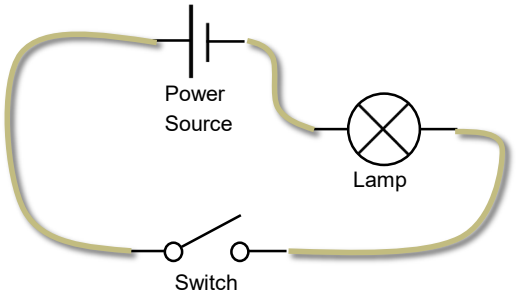
(You could submit more than 1 answer)

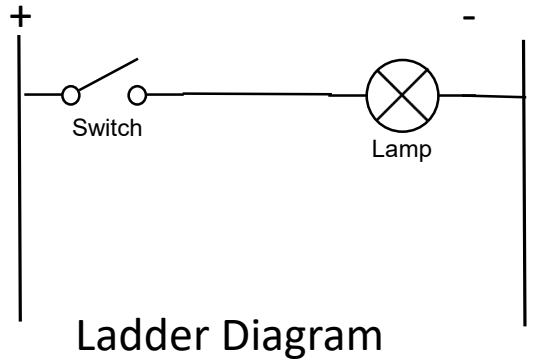
Example

Given the components below, **WIRE UP** the switch to light up the lamp.

DRAW circuit representation in Ladder Diagram.



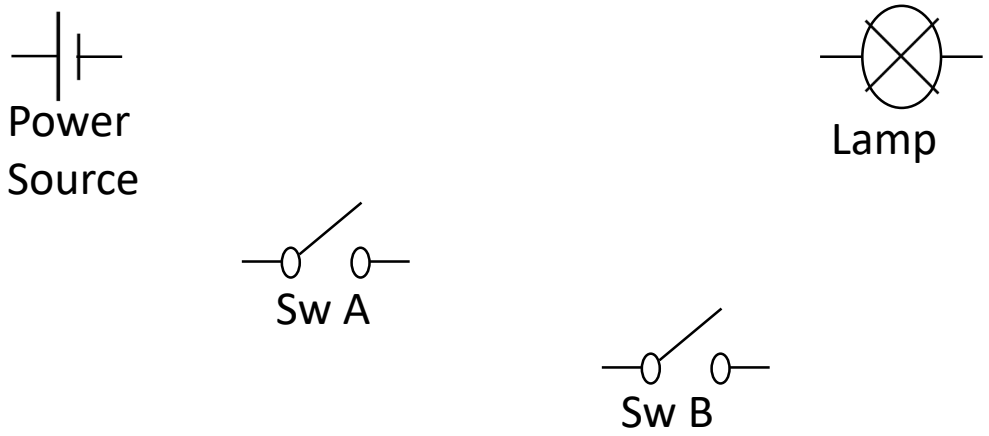




Q8 – Drawing “AND” Logic.

Given the components (2x switches, 1x lamp) **wire** up the required circuit such that Sw A and Sw B needs to be closed to turn on the lamp.

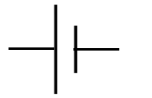
Next, represent in ladder diagram



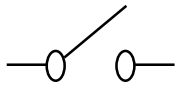
Q9 – Drawing “OR” Logic.

Given the components (2x switches, 1x lamp) **wire** up the required circuit such that Sw A or Sw B needs to be closed to turn on the lamp.

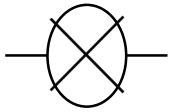
Next, represent in ladder diagram



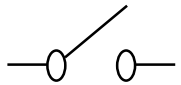
Power Source



Sw A



Lamp



Sw B

Q10 – Drawing “Latch Circuit”

Given the components (2x Push Buttons, 1x DPDT relay, 1x lamp) **design the ladder diagram** such that push button PB A is pressed momentarily (press and release) would turn on the lamp. The lamp would turn off when push button PB B is pressed.