Question (1): *Write true or false with correcting the wrong statement* (10 marks)
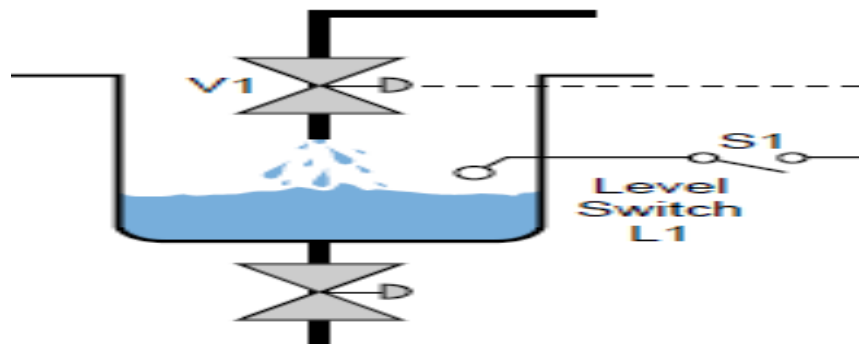
1) The OR output is FALS (0) if one or more inputs are TRUE (1).

2) An AND function can have an unlimited number of inputs, but it can have only one output.

3) NOR gate is sometimes called an inverter.

4) Compact PLCs may be configured individually.

5) During programming, the PLC should be in the terminal or programming mode.

6) Timer is necessary to hold an output energized, even when the input ceases.

7) SR Flip-Flop is used to operate devices for certain period.

8) Counters can be used to start an operation when a count is reached.

9) Hardware test stand used to RUN the I/Os of hardware devices in the field.

10) Byte, cell can store only one binary digit and bit is the acronym for "binary digit".

Question (2): (5 marks)

The solenoid valve (V1) will be open (ON) if selector switch S1 is ON and if level switch L1 is NOT ON (liquid has not reached level). For this process control, show the logic gate, truth table, and circuit representation.

Question (3): (5 marks)

Implement PLC program for motor start/stop by using the ladder logic diagram programming language.

With our best wishes *Associate Prof. Dr. Mohamed Ahmed Ebrahim*