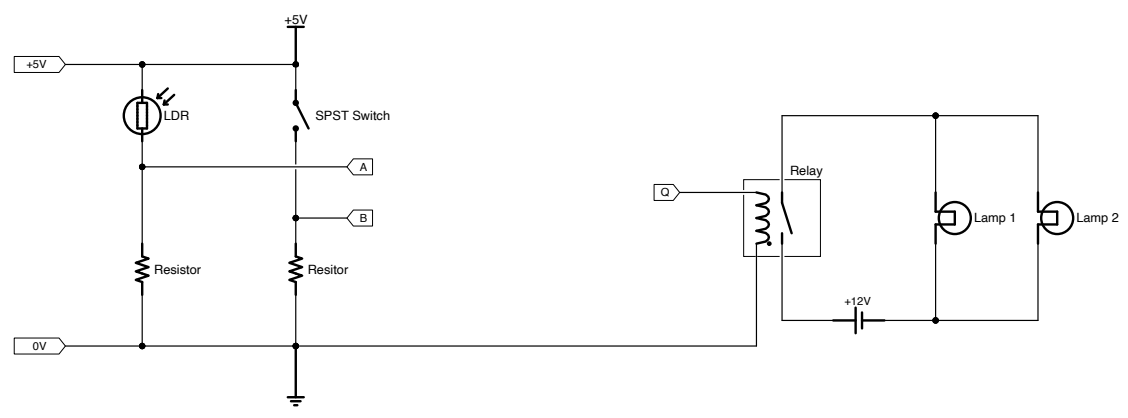


Name:
 Teacher:
 Class:
 Date:

Logic And Electrical Engineering - Practice Problems Set 2:

1. The figure below is part of a circuit that is used to turn on the parking lights of a car automatically when it is dark. A switch is included so that when it is OPEN, as shown in the diagram, the automatic system will be deactivated (turned OFF). A Light Dependant Resistor (LDR) is used as an input device to control the circuit.

Car Break Light Circuit



- a) The **truth table** for this circuit is shown below. On row has already been completed.

Column 1	Column 2	Column 3	Column 4
LDR (Logic @ A)	Switch (Logic @ B)	Parking Lights	Relay (Logic @ Q)
Light 1	Open ___	OFF	0
Light 1	Closed ___	_____	___
Dark 0	Open ___	_____	___
Dark 0	Closed ___	_____	___

- b) Complete the truth table for the car break light circuit shown above.
- Complete columns 1 and 2 to show the logic at levels A and B
 - Complete column 3 to show when the parking light should be ON or OFF
 - Complete column 4 to show the corresponding logic at level Q.
- c) Complete the following logic statement by inserting 0 or 1 where appropriate:
- The lamp must be **ON** when the **input A** is _____ and the **input B** is _____.
- d) **On the figure shown above**, indicate where an **AND** and a **NOT** gate would be inserted between points **A,B, and Q** to complete the circuit.

e) What is meant by the term **SPST**?

f) Describe how a **SPST toggle switch** works.

g) Why would you want a **toggle switch** rather than a **push switch** for this circuit?

h) Describe how a **Light Dependant Resistor (LDR)** works.

i) What is a **relay switch** and how dose it work?

j) Explain how this circuit works
