

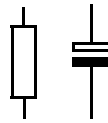
# Electronics Test - Timing / Amplification - 1

Question 1 Using  $t = CR$ , how long will it take a 100uF capacitor to charge through a 47Kohm resistor?

Question 2 What is a monostable?

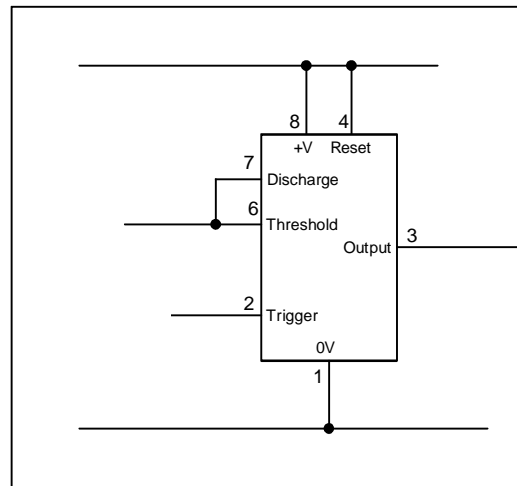
Question 3 What is an astable?

Question 4 Show where the two timing components would be connected to this monostable?



Question 5 What does the 'trigger' input do?

Question 6 Show how you would connect an LED to indicate the output?



Question 7 What is meant by frequency?

Question 8 Draw a symbol for a transistor and label its connections.

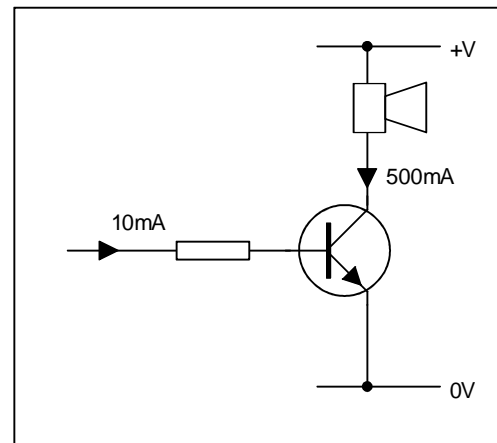
Question 9 Which connection is used to turn the transistor on?

Question 10 What is a darlington pair and why is it used?

Question 11 What is the minimum voltage needed to turn on a transistor?

Question 12 The diagram shows a transistor driving a siren. The siren draws 500mA and the transistor has an available base current of 10mA. What is the minimum gain required of the transistor to fully power the siren?

$$I_C = I_B \times h_{fe}$$



Question 13 What is a heatsink used for?