

**Faculty of Engineering and Technology**

**Department of Electrical and Computer Engineering**

**ENCS 2110**

**EXP 6 Pre-Lab: Sequential Logic Circuits using Breadboard and IC’s**

**Student’s name:** Anas Al Sayed

**Student’s No.:** 1221020

**Section:** 10

**Instructor:** Hanya Radwan

* **What is the appropriate display type (common anode/common cathode) that must be used with 7447 display decoders? Explain your answer.**

*The* ***7447 BCD to 7-segment*** *decoder/driver is designed to sink current, not source it. That means it pulls the output pins low* ***(****0****)*** *to turn on a segment.*

*So, the correct display type is:*

*Common Anode, In a common anode display, all anodes* ***(+)*** *are tied together and connected to Vcc* ***(****typically* ***+5V).***

*Each segment is lit by pulling its cathode* ***(−)*** *low, which is exactly what the 7447 does.*

*If you used a common cathode display, the 7447 wouldn’t work properly because it can't source current to turn on segments.*

**Assuming that the turn-on voltage for the LEDs is 1.7v, what is the proper value of the resistors to be connected between the 7447 decoder and the seven-segment display, to limit the current in the LED segments to 10mA?**

VLED= 1.7V

R = = = 330Ω

* **Assume that the resistors provided in the lab are 220Ω. What would the current flowing into the LEDs be?**  
  R= 220Ω

I = = = 0.015A