ASSIGNMENT-2
Subject Name: Basic Electronics
Subject Code: 303107151
Chapter 2

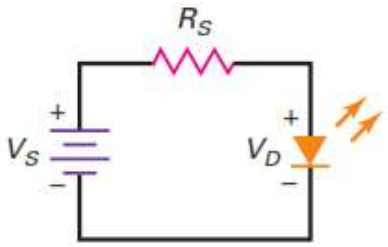
1. What is seven segment displays? What is its importance? List types of seven segment displays. Also draw the schematic diagram of its different types.

2. Explain the working principle of Photo Diode & Light Emitter Diode.

3. Why normal diode cannot work for fast switching? How to eliminate this problem? Explain Schottky diode (Hot carrier Diode).

4. Draw the symbol of varactor diode. List the application of it. Also draw the ac equivalent circuit and graph of capacitance versus reverse voltage.

5. What is the value of current passing through LED if voltage drop across LED V_{LED} is 2V and series resistance R_S is 500 Ω. (Consider below Figure)

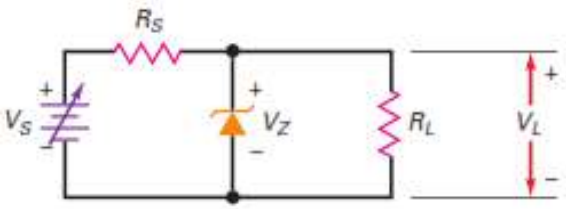


6. Draw symbol and explain briefly the working principle of Breakdown diode. (Zener Diode).

7. What is Zener breakdown? Give the comparison between Avalanche breakdown and Zener breakdown.

8. Will Zener diode operate in breakdown region or not? (Consider Figure 1)
   a. V_s = 10V R_s = 1KΩ, R_L = 1KΩ, V_z = 6V
   2. V_s = 18V R_s = 270Ω, R_L = 1KΩ, V_z = 10V
   3. V_s = 18V R_s = 270Ω, R_L = 1KΩ, V_z = 10V, R_z = 8.5Ω

   In both cases, find I_s, I_z and I_L.



(Figure 1)

9. A Zener regulator has input voltage that may vary from 22 to 30V. If the regulated output voltage is 12Vand that load resistance from 140Ω to 10K Ω, what is the maximum allowable series resistance? (Consider Figure 1)

10. A Zener regulator has an input voltage ranging from 15 to 20 V and a load current ranging from 5 to 20 mA. If the Zener voltage is 6.8V, what is the maximum allowable series resistance? (Consider Figure 1)

11. Difference between photo-diode and LED.

Note: Refer Electronic Principles by Albert Melvino, David Bates, McGraw –Hill publication.

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