Program: BC (CS)

Subject: Basic Electronics

Assignment Number: 05

Course Code: CSS-102

EDP Code: 101902011

Spring Semester 2019

Q.1 Give answers to each of the following:

1. What is the effect of temperature on zener voltage (V_Z)?
2. Explain breakdown due to zener effect.
3. Discuss the construction, operation, and applications of LEDs.
4. Discuss the construction, operation, and applications of laser diode.
5. Why the action of a small signal diode begins to deteriorate at high frequencies and what is the solution to this problem?

Q.2 Briefly discuss each of the following:

1. Varistors
2. Current-Regulator Diodes
3. Step-Recovery Diodes
4. Back Diodes
5. PIN Diodes

Q.3 Draw and explain each of the following:

1. I-V Graph of Zener diode
2. Sine-wave to square-wave converter
3. Blown-fuse indicator
4. I-V graph of a tunnel diode
5. Diode relative luminous intensity versus forward current graph
6. Diode relative luminous intensity versus wavelength graph
7. Diode luminous intensity versus ambient temperature graph
8. Blown-fuse indicator
9. Seven-segment display
10. Doping profiles of varactor

1.

Q.4 Solve each of the following:

1. Is the zener diode in Figure 01 operating in the breakdown region?
2. Find the source current, load current, and zener current in Figure 01.
3. Find the average LED current in Figure 02 if the capacitance is 068µF.

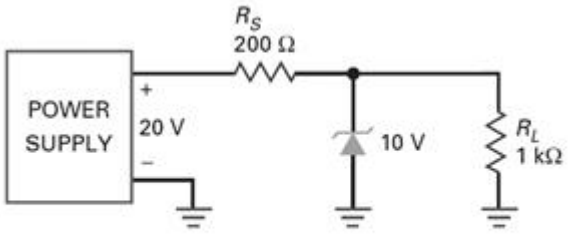

Figure 01

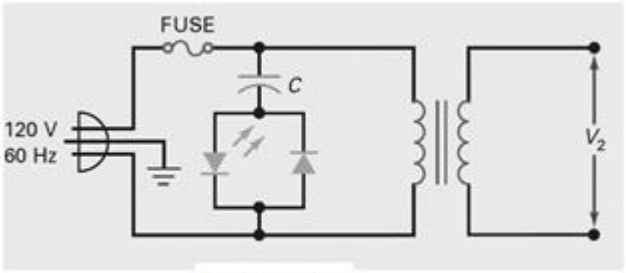

Figure 02