JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

MID TERM (SUMMER SEMESTER EXAMINATION)- June-2018

COURSE CODE: **10B11EC211** MAX. MARKS:**50**

COURSE NAME: **Basic Electronic Devices and Circuits**

COURSE CREDITS: 4 MAX. TIME: **2 Hrs**

Note: *All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

Q1. a) Explain what is the reverse saturation current in a silicon diode and why it is much smaller than in a germanium diode.

(*b*) What is the difference between diffusion and drift current in P-n junction?

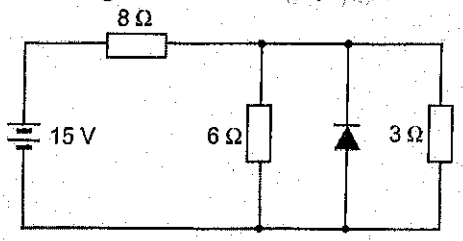
(c) How the characteristics of diodes change with the change in temperature?

(d) What are Figures of Merit of a Rectifier?

(e) The barrier potential developed across open-circuited PN-junction aids the flow of minority carriers from both sides of the junction. Explain how the current due to this flow of charge carriers is counter balanced. **[10]**

Q2. a) Draw and explain VI characteristics of PN diode and give its characteristics equation

b) Determine the current through 3 ohm resistor, assume the diode be ideal. **[6+4]**

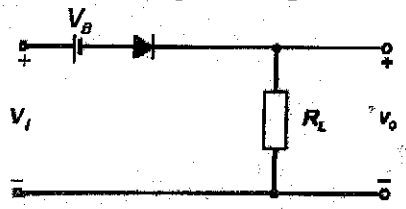


Q3 a) Differentiate between Zener and Avlanche Diodes and describe how Zener diode act as a voltage regulator.

(b) A zener regulator has input dc supply voltage of 25 V, a series resistance of 470 Ω, a zener voltage of 15 V, and a load resistance of 1 kΩ. What are the load voltage and the zener current ? **[6+4]**

Q4. a) What are Diode Clipper Circuits and biased clipper circuits? **[6+4]**

b) For he given circuit , find he output if he input voltage is 15 V sinusoidal signal.



Q5. a) Explain Full wave Rectifier and calculate is Ripple factor. **[6+4]**