Electronics-I :
Electronics and Solid State Devices

10403/NH

CS/2110

Paper B

Semester-V

Time Allowed :3 Hours | Maximum Marks:30

Section – A

1. What is a Zener diode. Give its I-V characteristics. (5)
2. What is a Voltage multiplier circuit. Give the working of a Full Wave Voltage Doubler. (5)
3. Explain the working of Full Wave Rectifier and Derive an expression of Efficiency and Ripple factor. (5)
4. Derive Diode equation for p-n junction.(5)

Section – B

5. What are Photo conductive devices? Explain any one of them. (5)
6. Draw Common Base circuit of Junction transistor and explain its input and output characteristics. (5)
7. Explain the Structure and working of n-Channel JFET and give its characteristics.(5)
8. Give the differences between Bipolar Junction Transistor and Field Effect Transistor. (5)

Section – C (Do any five) (5x2)

9.

(i) Why FET is known as unipolar in nature?
(ii) Why Base region of Transistor is lightly doped and is made thin?
(iii) What is the relation between alpha and beta?
(iv) A d.c voltage source having an open circuit voltage of 4V and internal resistance of 2 ohm. Obtain an equivalent current source.
(v) Classify conductors, insulators and semiconductors on the basis of their Band Structure.
(vi) What is the charge on a p-type semiconductor. Explain.
(vii) Can Emitter and Collector be interchanged. Explain.

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