Reg. No. : | | | | | | | | | | |

Question Paper Code: 31241

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2016

Second Semester

Electronics and Communication Engineering

01UEC207 - ELECTRONIC DEVICES

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. What is drift current?
2. What are the classifications of semiconductors?
3. Write diode current equation.
4. What is avalanche multiplication in semiconductor devices?
5. State the relation between α and β of a transistor.
6. What are the operating modes of BJT with reference to junction biasing?
7. Mention any two advantages of FET over BJT.
8. Define the pinch- off voltage of JFET.
9. Define latching current.
10. Differentiate LED and LCD.

PART - B (5 x 16 = 80 Marks)

11. (a) (i) State and explain mass action law. (8)

(ii) Derive the conductivity equation for an N type and P type semiconductor. (8)

Or

(b) Explain the drift and diffusion currents for semiconductor. (16)

12. (a) (i) Explain with a neat diagram, the construction and working principle of PN junction diode. (8)

(ii) With help of relevant circuit diagram explain the V-I characteristics of Zener diode. (8)

Or

(b) Explain the operation of bridge rectifier and derive the average output equation, RMS output voltage and ripple factor. (16)

13. (a) Why BJT is said to be current controlled device? With the help of neat diagram explain the operation of NPN transistor. (16)

Or

(b) What are the different types of BJT configurations? Explain in detail the common emitter configuration with its input and output characteristics. (16)

14. (a) Explain the construction and working of N channel JFET. Also explain the drain and transfer characteristics of the same. (16)

Or

(b) (i) Explain the operation and characteristics of an enhancement mode MOSFET. (8)

(ii) Explain the operation and characteristics of an depletion mode MOSFET. (8)

15. (a) Explain the construction and working of SCR. Also explain the static characteristics of the same. (16)

Or

(b) Write short notes on

(i) Photodiode (8)

(ii) Phototransistor (8)

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