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

Question Paper Code: 21009

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2015.

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. Draw the energy band structure of semiconductor.
2. Define the term conductivity in a semiconductor.
3. What is zener breakdown?
4. Write short note on avalanche breakdown.
5. When does a transistor act as a switch?
6. Write short notes leakage current in common base configuration.
7. What are the advantages of field effect transistor over BJT?
8. Define pinch off voltage (Vp).
9. What is DIAC?
10. List out any four applications of photodiode.

PART - B (5 x 16 = 80 Marks)

11. (a) (i) Write the classification of solids with energy band diagram. (8)

(ii) Explain about P – type and N – type semiconductors. (8)

Or

(b) (i) Explain about drift and diffusion current of semiconductor. (8)

(ii) Explain how semiconductor parameters are varying with temperature. (8)

12. (a) Explain the working of PN junction diode under various biasing conditions using the relevant circuit sketch. (16)

Or

(b) Explain the construction and working of Half wave and Full wave rectifier with resistive load. (16)

13. (a) (i) Explain in detail the input and output characteristics of common emitter transistor. (12)

(ii) Write the characteristics of common collector transistor configuration. (4)

Or

(b) (i) Explain the operation PNP transistor. (8)

(ii) Explain the working principle of transistor amplifier. (8)

14. (a) Explain the construction, working and operating characteristics of N- channel JEFTs with relevant diagrams. Give the application of JFET. (16)

Or

(b) (i) Compare the depletion mode and enhancement mode of MOSFET. (4)

(ii) Explain the principle of operation of enhancement N – channel MOSFET and draw its drain characteristics. (12)

15. (a) (i) Explain the working principle and characteristics of silicon controlled rectifier. (8)

(ii) Explain the V – I characteristics of UJT. (8)

Or

(b) (i) Explain the characteristics of TRIAC. (8)

(ii) Write about photodiode and phototransistor. (8)

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