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Question Paper Code: 52408

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Second Semester

Electronics and Communication Engineering

15UEC208 - ELECTRONIC DEVICES

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. What types of impurity atoms are added to increase the number of conduction-band electrons in intrinsic silicon? CO1- R
(a) bivalent (b) octavalent (c) pentavalent (d) trivalent
2. One eV is equal to _____ J. CO2- R
(a) 6.02×10^{23} (b) 1.6×10^{-19} (c) 6.25×10^{18} (d) 1.66×10^{-24}
3. Most of the electrons in the base of an NPN transistor flow CO3- R
(a) into the collector (b) into the emitter
(c) in to the base supply (d) out of base lead
4. The _____ has a physical channel the drain and source CO4- R
(a) D-MOSFET (b) E-MOSFET (c) V-MOSFET (d) None of the above
5. A Diac is switch CO5- R
(a) An A.C (b) D.C (c) Either of the above (d) None of the above

PART – B (5 x 3= 15 Marks)

- 6 State Mass Action Law. CO1- R
- 7 Distinguish between avalanche and Zener Breakdown. CO2- R
- 8 Define Regulator. CO3- R

9. Define Trans-conductance. CO4- R
10. What is SCR? Mention its Applications. CO5- R

PART – C (5 x 16= 80Marks)

16. (a) Explain the Classifications of semiconductors and derive the expression for carrier concentration in intrinsic semiconductor. CO1- U (16)
- Or
- (b) Explain about drift and diffusion currents and obtain its expression. CO1- U (16)
17. (a) (i) Describe the action of PN junction diode under forward bias and reverse bias. CO2- U (8)
- (ii) Explain how a barrier potential is developed at the PN Junction. CO2- U (8)
- Or
- (b) Explain the construction and working principle of Half wave and full wave Rectifier. CO2- U (16)
18. (a) Explain CE Transistor configuration and draw a circuits for determining input and output characteristics. CO3- U (16)
- Or
- (b) Explain briefly about switched mode power supply. CO3- U (16)
19. (a) Explain the construction and operation of N Channel JFET. CO4- U (16)
- Or
- (b) With help of a suitable diagram explain the working EMOSFET and DMOSFET. CO4- U (16)
20. (a) Explain the principle behind the tunnel diode and varactor diode. CO5- U (16)
- Or
- (b) Draw the characteristics of UJT and explain its working principle. CO5- U (16)