(DEE 213)

B. Tech. DEGREE EXAMINATION, MAY - 2015

(Examination at the end of Second Year)

Electricals and Electronics

Paper - III : ELECTRONIC DEVICES

Time : 3 Hours **Maximum Marks : 75**

Answer question No. 1 compulsory ***(15 x 1 = 15)***

Answer any ONE question from each unit ***(4 x 15 = 60)***

1) a) Define electrostatic deflection sensitivity.

b) What is the cathode material used in cathode Ray tube?

c) What is the trajectory of an electron moving with velocity, V in a magnetic field B?

d) What is Law of the junction?

e) Define hall effect.

f) What is Fermi level?

g) What are the specifications of diode?

h) What is Zener break down?

i) What are the applications of photo diode?

j) What is thermal run away?

k) What is 'Early Effect'?

l) Draw the circuit diagrams of CB, CE and CC configurations using PNP transistor.

m) What is the need for transistor biasing.

n) Draw the characteristics of SCR.

o) Why FET is called as Voltage controlled device?

Unit – I

2) a) With the help of a neat sketch, describe principle and working of cathode Ray Tube.

b) What are the applications of CRO?

OR

3) a) Derive continuity equation.

b) Classify the materials based on the Energy band diagrams.

Unit – II

4) a) Discuss PN diode VI characteristics with neat sketch.

b) Explain about formation of PN junction.

OR

5) a) Explain the principle of operation of Tunnel diode and draw the V–I characteristics.

b) What are the applications of tunnel diode?

Unit – III

6) a) Explain how transistor will act as an amplifion.

b) In a certain transistor, the emitter current is 1.02 times as large as the collector current. If the emitter current is 12 mA, find the base current.

OR

7) a) Derive the expression for stability factor 'S' in self bias circuit.

b) Define stability factor.

Unit – IV

8) a) With neat structure explain the principle of operation of JFET.

b) List the advantages of FET over BJT.

OR

9) a) Explain the principle of operation and VI characteristics of UJT.

b) List the applications of UJT.

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