PVP 12

Code: **CS2T3, IT2T4**

I B.Tech-II Semester-Regular Examinations - July 2014

ELECTRONIC DEVICES AND CIRCUITS
(Common for CSE & IT)

Duration: 3 hours Marks: 5x14=70

Answer any FIVE questions. All questions carry equal marks

1. a) Explain about types of semiconductor with neat sketches 6 M

   b) Explain the Potential distribution in a p-n junction diode. 8 M

2. a) Draw and explain the operation of a bridge rectifier and also write advantages and disadvantages. 7 M

   b) Draw the volt-ampere characteristics of tunnel diode. Explain the characteristic on the basis of tunneling theory. 7 M

3. a) Explain the concept of operating point and load line. 7 M

   b) Explain How the transistor working as a switch with the necessary equations. 7 M

4. a) Draw the Self bias circuit and obtain the expression for the stability factor S. What are the advantages of this circuit? 7 M

b) Draw and explain the small signal equivalent circuit for an emitter follower stage at low frequencies. 7 M

5. a) What is meant by loading effect? Explain how it effects the performance of a circuit. 7 M

b) Explain how CC amplifier is used for impedance matching. 7 M

6. a) Obtain the expression for the pinch off-voltage Vp in the case of n-channel JFET 7 M

b) Explain how JFET can be used as analog switch. 7 M

7. a) Explain the working of MOSFET in depletion mode. Sketch its typical characteristics. 9 M

b) Draw and Discuss the four layer diode. 5 M

8. a) Why gain is increasing at low frequencies in the frequency response of an amplifier. 7 M

b) Explain the impedance matching and also write its advantages. 7 M