

B.Tech I Year (R07) Supplementary Examinations, December 2010

ELECTRONIC DEVICES & CIRCUITS

(Electronics & Communication Engineering, Computer Science & Engineering, Electronics & Instrumentation Engineering, Information Technology, Electronics & Control Engineering, Electronics & Computer Engineering, Computer Science & Systems Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

1. (a) Derive the expression for electrostatic deflection sensitivity.
(b) Explain the principle of CRT.
2. (a) Explain the volt ampere characteristics of PN diode.
(b) Explain the temperature dependence of VI characteristics.
3. (a) Derive the ripple factor expression for FWR with inductor filter.
(b) Discuss the importance of PIV in rectifier circuits.
4. Explain the construction & working function of NPN transistor in detail.
5. (a) Explain stability factor in detail.
(b) Explain the factor affecting stability of Q point.
6. Derive the diode current equation for the PN diode.
7. A colpitts oscillator is designed with $C_1=100\text{PF}$. And $C_2=7500\text{PF}$. The inductance is variable determine the range of inductance values, if the frequency of oscillation is to vary between 950 KHz and 2050 KHz.
8. Draw a neat circuit diagram of RC phase shift oscillator using BJT and explain its working principle.