Code :R7100407

R7

B.Tech I Year (R07) Supplementary Examinations, May 2011
ELECTRONIC DEVICES & CIRCUITS
(Common to 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

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1. What are the front panel controls of CRO? Explain.
2. Write a short notes on:
   (a) Field intensity
   (b) Potential
   (c) Energy
   (d) Force in magnetic field
   (e) Force in electric Field
   (f) Coulomb's Law.
3. Explain in detail about the capacitance effect of PN junction diode reverse biased condition also derive the expression for that capacitance.
4. (a) An ideal germanium diode has a reverse saturation current of 20Ma. Find the dynamic resistance for a forward bias of 0.2V
   (b) Differentiate static and dynamic resistance.
5. (a) Explain the volt ampere characteristics of PN diode.
   (b) Explain the temperature dependence of VI characteristics.
6. Derive the expression for the frequency of oscillations and minimum gain for sustained oscillations of RC phase shift oscillator using BJT.
7. Explain the operation of a transistorized Wein-bridge oscillator with the help of neat circuit diagram. How is amplitude stability achieved in this circuit?
8. A colpitts oscillator is designed with $C_1 = 100$PF. And $C_2 = 7500$Pf. The inductance is variable Determine the range of inductance values, it the frequency of oscillation is to vary between 950 KHz and 2050 KHz.

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