Code :9A04301a

R9

II B.Tech I Semester(R09) Supplementary Examinations, May 2011
ELECTRONIC DEVICES & CIRCUITS
(Electrical & Electronics Engineering)

Time: 3 hours **Max Marks: 70**

Answer any FIVE questions
All questions carry equal marks

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1. (a) Discuss temperature dependence of PN diode VI characteristics.
   (b) Derive an expression for dynamic resistance of PN diode.
   (c) The voltage across a silicon diode at room temperature is 0.65 Volts when 2.2 mA current flows through it. If the voltage increases to 0.75 Volts, Calculate the diode current.
2. (a) With circuit and necessary waveforms explain the operation of centered tapped FWR.
   (b) Derive the expression for ripple for the circuit FWR with inductor filter.
3. (a) Explain input characteristics transistor CB configuration.
   (b) A transistor with $\alpha = 0.95$ has a reverse saturation current of 1uA in CB configuration. Calculate the value of leakage current in the CE configuration . Also find the collector current and the emitter current if the value of base current is 25 uA.
4. (a) What are the draw backs transistor fixed bias circuit.
   (b) Derive an expression for stability factor S in self bias circuit.
5. (a) With neat structure explain the principle of operation of JFET.
   (b) Explain how depletion mode MOSFET can also act as enhancement mode MOSFET.
6. (a) Derive an expression for voltage gain, Input Impedance and output impedance of CS amplifier at low frequencies.
   (b) Discuss self biasing of JFET.
7. (a) Give the comparison of CE,CC and CB amplifier with respect to voltage gain current gain Input impedance and output impedance.
   (b) Find expression for voltage gain, current gain, Input impedance and output impedances of CC amplifier using simplified hybrid model.
8. Discuss the principle of operation and VI characteristics of
   (a) Light Dependent resistor
   (b) Uni Junction Transistor

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