Code No: OR220552 **OR**

II B.Tech II Semester Supplementary Examinations, January 2005
ELECTRONIC CIRCUITS AND LINEAR ICS
(Common to Computer Science & Engineering and Information Technology)

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

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What is a rectifier? Show that PN diode works as rectifier.
   (b) Draw the circuit diagram of a rectifier with a load resistance of 3.5kΩ.If the diode resistance and secondary coil resistance together has a resistance of 800Ω and the input voltage has a signal voltage of peak value 240V calculate:
      i. Peak, average and rms value of current flowing.
      ii. Dc power output
      iii. Ac power input
      iv. Efficiency of the rectifier
2. (a) Determine the h-parameters from the characteristics of CB configuration.
   (b) Explain the input and output characteristics of a transistor in CB configuration.
   (c) In a germanium transistor CE amplifier biased by feedback resistor method, V_{CC}= 20VV_{BE}= 0.2V,β= 100and operating point is chosen such that V_{CE}= 10.4VandJ_C= 9.9ma determine the value of $R_B$andR_C.
3. (a) What are the constituent parts of oscillator briefly explain.
   (b) Draw the circuit of Hartey oscillator and explain its working. Derive expressions for frequency of oscillation and condition for starting the oscillator.
4. (a) What are the different characteristics of OP-AMP. Explain briefly.
   (b) What is meant by slewrate? Explain its importance in OP-AMP.
5. (a) What is meant by free running multi vibrator? Explain how 555 timer can be employed as free running multi vibrator.
   (b) Draw the functional block diagram of 555 times and explain the operation.
6. (a) Distinguish between oscillator and amplifier. Explain the frequency response of RC coupled amplifier.
   (b) What is a regulator? Explain the operation and importance of a switching regulators.
7. (a) Why do you need S/H circuit in data loggers. Explain the operation of S/H circuit employing FET as input amplifier.
   (b) Give a block diagram of PLL and explain its operation.

8. Write short notes on:
   (a) ACTIVE FILTERS
   (b) OP-AMP INTERGRATORS
   (c) Photo diode.

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