2007-PUNJAB UNIVERSITY

B.TECH DEGREE EXAMINATION

ANALOG ELECTRONICS

(ELECTRONICS AND COMMUNICATION ENGINEERING)

TIME-3HOUR
MARKS-100

PART A[10*2=20 MARKS]

1. What is an amplifier?

2. What is Miller effect?

3. Define the unit decibel for expressing (i) voltage (ii) current and (iii) power.

4. While defining the cutoff frequencies of an amplifier, why do we take 70.7% of the mid-band gain.

5. How does a signal generator differ from an ordinary oscillator?

6. Although a class-B single ended power amplifier has high efficiency, yet it is less used in practical circuits. Explain why?

7. Explain in brief the function of a tank circuit in a tuned-voltage amplifier.

8. State what will happen to the voltage gain of an amplifier if the bypass capacitor is open circuited.

9. State the factors to be considered while designing a biasing circuit for a good transistor voltage amplifier.

10. A multistage amplifier consists of two stages. The voltage gain of the stages are 30 and 80. Calculate the overall voltage gain in dB.

PART B[10*8=80 MARKS]

2. Explain in detail the effect of temperature on zener diode.

3. Explain the concept of feed back

4. State and explain at leas one typical application of each type of coupling.

5. Draw and design a zener voltage regulator circuit to provide output of 12 V for a maximum load current of 0.5 A, when the input voltage variation is 15 to 18 V

6. Draw and explain the working of a push pull amplifier circuit.
7. (a) Explain types of negative feedback in transistor circuits.

(b) The parameters of a crystal oscillator equivalent circuit are Ls= 0.8 H, Cs= 0.08 pf, Rs=5 kohm and Cp= 1.0 pf. Determine the series and parallel resonance frequencies.

8. Draw the circuit of a common emitter transistor configuration and give its h-parameter model. Find out its voltage gain and current gain taking into account the source resistance.

9. Draw and explain the circuit of Wien bridge oscillator. Derive the expression for frequency of oscillation. Will oscillation take place if the bridge is balanced? Explain.