Roll No.									

16

B.E. / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV / DEC 2011

ELECTRONICS AND COMMUNICATION ENGINEERING BRANCH

FOURTH SEMESTER

EC 9252 – ELECTRONIC CIRCUITS - II

(REGULATIONS 2008)

Time: 3 Hours Max. Marks:100

Answer All Questions

Part-A (10 x 2 = 20 Marks)

1) Give brief note on frequency compensator.
2) List the properties of negative feedback amplifier.
3) State the concept of Barkhausen criteria.
4) Write short notes about the Franklin oscillator.
5) Differentiate the single tuned and the multiple tuned amplifier circuits.
6) List the uses of transformers.
7) List the applications of astable multivibrator.
8) Write short notes on current sweep generators.
9) State and explain any two switching characteristics of IGBT.
10) Define the term ripple factor.

Part-B (5 x 16 = 80 Marks)

11. (a)

(i) Derive the input impedance R_{if} of a voltage series and current shunt feedback amplifiers. (8)

(ii) Prove that "Bandwidth with feedback of (1+Aβ) times the bandwidth without feedback". (8)

12.

(a) With the circuit of Colpitts oscillator, explain the working of oscillation conditions and derive the frequency of oscillation. (16)

(or)

(b) (i) Explain in detail about the RC phase shit oscillator and derive the frequency of oscillation. (10)

(ii) Find the operating frequency of a Hartley oscillator if L_1 = 50 μH, L_2 = 1 mH and mutual inductance between the coils M = 10 μH and C = 10PF. (6)

13.

(a)

(i) A class-C tuned amplifier has R_L = 12 KΩ and tank circuit Q = 120.

Calculate the tank circuit values of L and C. Assume V_{CC} is 40 V, resonant frequency is 10 MHz and the worst case power dissipation is 40 mW. (10)

(ii) Explain the in detail about the stagger tuned amplifiers. (6)

(or)

(b) Describe in detail about the analysis of tuned amplifier's stability issues using neutralization techniques. (16)

14)

(a) Describe with circuit diagram operation of monostable multivibrator using BJT. Derive the expression for ON time. Draw the waveforms at all terminals. (16)

(or)

(b) With neat circuit diagram, explain the operation of Schmitt trigger. Draw the waveforms at all terminals. (16)

15. (a) With neat diagram, explain the operation of full wave rectifier with capacitive filter and derive the expression for ripple factor. (16)

(or)

(b) Explain in detail about the DC – DC conversion using Buck – Boost converter. (16)