AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING

Electronics and Communication Engineering

B.E./B.Tech. DEGREE MODEL EXAMINATION

Fourth Semester -EC2251 — ELECTRONIC CIRCUITS – II

Time: Three hours Maximum:100 Marks

Answer ALL Questions

PART A — (10 × 2 = 20 Marks)

1. What is the impact of negative feedback on noise in circuits?

2. Define sensitivity and de-sensitivity of feedback amplifiers.

3. Mention two essential conditions for a circuit t o maintain oscillations.

4. In a RC phase shift oscillator, if $R_1=R_2=R_3=$ 200 KΩ and $C_1=C_2=C_3=$100pF find the frequency of the oscillator.

5. Define tuned amplifier.

6. Define the term unloaded Q factor.

7. Give two applications of Bistable multivibrator.

8. If an Astable multivibrator has $C_1=C_2=$1000pf and $R_1=R_2=$20 KΩ, Calculate the frequency of oscillation.

9. Mention any two applications of blocking oscillator.

10. What is the function of time base circuit?

PART B — (5 × 16 = 80 Marks)

11. (a) (i) Explain impact of negative feedback on bandwidth, distortion, Input Impedance and Output Impedance of a circuit. (8)

(ii) An amplifier has a mid-frequency gain of 100 and a bandwidth of 200 KHz. (1) What will be the new bandwidth and gain, if 5% negative feedback is introduced? (2) What should be the amount of feedback, if the bandwidth is to be restricted to 1 MHz? (8)

Or

(b) (i) Explain voltage shunt feedback and derive the input and output impedance. (8)

(ii) Explain Nyquist criterion to analyse the stability of feedback amplifiers. (8)

12. (a) Explain RC phase oscillator and derive its frequency of oscillation. (16)

Or

(b) Explain Wien Bridge oscillator and derive its frequency of oscillation. (16)

13. (a) Describe the single tuned amplifier with neat diagram (16)

Or

(b) (i) Explain class C tuned amplifier and derive its efficiency. (10)

(ii) Explain Hazeltine Neutralization Method. (6)

14. (a) what is the response of low pass RC circuit for sinusoidal, step, pulse, square wave and ramp inputs (16)

Or

(b) Explain Astable multi vibrator with neat sketch (16)

15. (a) (i) Explain about monostable blocking oscillator with base timing. (8)

(ii) Explain the working of UJT saw tooth generator and derive its frequency (8)

Or

(b) (i) Explain any one type of Current-Time Base Circuit (8)

(ii) How does an Astable circuit act as a free running blocking oscillator? Draw the circuit and explain (8)