B.E DEGREE EXAMINATIONS: APR/MAY 2011

Fourth Semester

ELECTRONICS AND COMMUNICATION ENGINEERING

U07EC401: Electronic Circuits II

Time: Three Hours   **Maximum Marks: 100**

Answer ALL Questions:-

PART A (10 x 1 = 10 Marks)

1. A gain of the amplifier with feedback is

    (a) $A/(1-A\beta)$ (b) $(1-A\beta)/A$ (c) $(1-A)/A\beta$ (d) $A\beta/(1-A)$

2. The value of input resistance in shunt-series feedback is

    (a) $(1-Av\beta)/R_i$ (b) $R_i/(1-Av\beta)$ (c) $(1-R_i)/Av\beta$ (d) $Av/(1-R_i\beta)$

3. Energy stored in the tank circuit per cycle is

    (a) $W_t=SV_t^2$ (b) $W_t=C^2V_t$ (c) $W_t=CV_t^2$ (d) $W_t=C/V_t^2$

4. The Condition for Barkhausen Criteria is

    (a) $A_v\beta=-1$ (b) $A_v\beta=1$ (c) $A_v\beta=0$ (d) $A_v\beta=2$

5. The quality factor Q for capacitive circuit is

    (a) $Q=(\omega/CR)$ (b) $Q=(C/\omega R)$ (c) $Q=\omega CR$ (d) $Q=1/\omega CR$

6. Resonant frequency of an LC tank circuit is

    (a) $f_r=1/2\pi\sqrt{LC}$ (b) $f_r=2\pi/\sqrt{LC}$ (c) $f_r=\sqrt{LC}/2\pi$ (d) $f_r=2\pi\sqrt{LC}$

7. Duty cycle for symmetrical astable mutivibrator is

    (a) 0.5   (b) 0.7   (c)1   (d) 0.2

8. The expression for displacement error is

    (a) $e_d=(T/\tau)_{max}/\Delta$ (b) $e_d=\Delta/(T/\tau)_{max}$ (c) $e_d=T/\tau$ (d) $e_d=\tau/T$

9. In programmable UJT circuit the value of gate voltage V_G is

    (a) $V_G=V_{BB}R_3/R_2+R_3$ (b) $V_G=V_{BB}/R_2+R_3$ (c) $V_G=V_{BB}R_3/R_2$ (d) $V_G=R_3/R_2+R_3$

10. The maximum frequency of blocking oscillator is

    (a) $f_{max}=1/2T$ (b). $f_{max}=2T$ (c). $f_{max}=1/3T$ (d) $f_{max}=1/4T$

PART B (10 x 2 = 20 Marks)

11. List the advantages and disadvantages of negative feedback.

12. The gain of an amplifier is 100 with its bandwidth 10KHz. If 10% of negative feedback is applied, determine A_{vf} and B_{wf}.

13. Write the Brakhausen Criterion.

14. What is piezo electric effect?

15. Write the advantages of tuned amplifiers.

16. Given L=250µH and C_{eq}=560P_f, find the resonant frequency of the tuned circuit.

17. What is meant by self starting astable mutivibrator?

18. What is Schmitt Trigger?

19. What is meant by blocking oscillators?

20. List the applications of pulse transformer.

PART C (5 x 14 = 70 Marks)

21. a) Discuss in detail about

   (i) Voltage series feedback (7)

   (ii) Current series feedback (7)

(OR)

 b) Discuss in detail about

   (i) Voltage shunt feedback (7)

   (ii) Current shunt feedback (7)

22. a) Explain the working principle with neat diagram of

   (i) Hartley oscillator (7)

   (ii) Clapp oscillator (7)

(OR)

 b) Explain briefly about

  (i) Wein bridge oscillator (7)

  (ii) Pierce oscillator (7)

23.a) Explain briefly about

   (i) Single tuned amplifier (7)

   (ii)Synchronously tuned amplifier (7)

(OR)

 b) (i) Analyze power gain, power dissipation and efficiency of class C tuned amplifier. (7)

  (ii) Explain the principle narrowband coil neutralization technique. (7)

24.a) (i) Explain the working principle of collector coupled astable mutivibrator?	(7)

    (ii) Explain the working principle of emitter coupled astable mutivibrator?	(7)

(OR)

  b) Briefly explain the working principle of

    (i) Diode clipper	(7)

    (ii) Diode clamper	(7)

25.a) Discuss in detail about astable blocking oscillator using Emitter timing.

(OR)

  b) (i) Discuss briefly about the function of UJT sawtooth generators.	(7)

    (ii) Explain the working principle of boot strap ramp generator.	(7)

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