

Reg. No. : 

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**Question Paper Code : 80336**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Fourth Semester

Electronics and Communication Engineering

EC 6401 – ELECTRONIC CIRCUITS – II

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What will happen for noise, if we introduce negative feedback at amplifier?
2. An amplifier has an open loop gain of 1000 and a feed back ratio of 0.04. If the open loop gain changes by 10% due to temperature, find the % change in gain of the amplifier with feedback.
3. What are the factors which affect the frequency stability of an oscillator?
4. What are the merits and demerits of RC phase shift oscillator?
5. List out some advantages of double tuned amplifier.
6. Define Q factor of the capacitor.
7. What are the different types of multivibrator?
8. Mention the uses of Schmitt trigger circuit.
9. Draw the Millers circuit to activate the sweep.
10. What is known as intrinsic stand off ratio and mention its range?

PART B — (5 × 16 = 80 marks)

11. (a) Draw the block diagram of current series feedback amplifier and derive an expression for input resistance, voltage gain and output resistance.

Or

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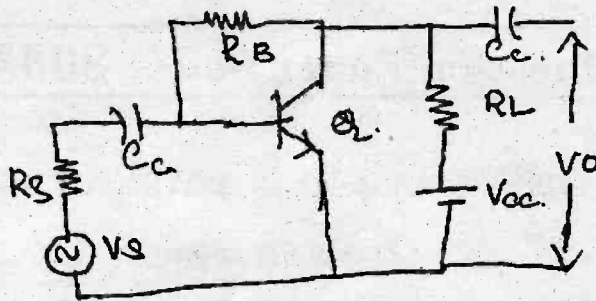
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PART B — (5 × 16 = 80 marks)

11. (a) Draw the block diagram of current series feedback amplifier and derive an expression for input resistance, voltage gain and output resistance.

Or

- (b) Identify the feed back topology for the network shown below, which have  $R_s = 600\ \Omega$ ,  $h_{ie} = 5\ \text{k}\Omega$ ,  $h_{fe} = 80$ ,  $R_L = 2\ \text{k}\Omega$  and  $R_B = 40\ \text{k}\Omega$ . Calculate  $A_v$ ,  $R_{if}$ ,  $A_{vf}$ ,  $R_{of}$  and  $R'_{of}$ .



12. (a) Derive the general form for frequency of oscillation for LC oscillator with suitable diagram.

Or

- (b) Enumerate the following :

- (i) Franklin oscillator
- (ii) Armstrong oscillator.

13. (a) Discuss the effect of cascading single tuned amplifier on bandwidth.

Or

- (b) (i) Briefly describe about hazeltine neutralization method with suitable diagram. (8)
- (ii) Derive the efficiency of class 'c' tuned amplifier. (8)

14. (a) Design a saturated collector coupled multivibrator for the following specification. Output voltage 12 V peak. Output to be positive pulse, the duration is  $10\ \mu\text{s}$ . The time between pulses to be  $20\ \mu\text{s}$ , for the BJT  $h_{fe} = 100$ ,  $I_{CBO} = 0$ ,  $I_{C(ON)} = 1\ \text{mA}$ , assume  $V_{CE(\text{sat})} = 0.2\ \text{V}$ .

Or

- (b) Explain the operation and working principle of monostable multivibrator with necessary diagram.

15. (a) Briefly describe about the working of UJT for relaxation oscillator with the help of suitable circuit diagram and derive its frequency of oscillation.

Or

- (b) Analyze free running blocking oscillator with base timing using necessary circuit diagram and waveform.