

CMR ENGINEERING COLLEGE: : HYDERABAD

UGC AUTONOMOUS

II-B.TECH-II-Semester End Examinations (Regular) -July- 2024

ELECTRONIC CIRCUIT ANALYSIS

(ECE)

[Time: 3 Hours]

[Max. Marks: 60]

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 10 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A**(10 Marks)**

1. a) What are the advantages of Cascode amplifier? [1M]
- b) Define gain bandwidth product. [1M]
- c) What are the types of negative feedback amplifiers? [1M]
- d) Write the expression for input and output resistance of Current series feedback amplifier. [1M]
- e) What is the condition for oscillations? [1M]
- f) Give the expression for frequency of oscillation in RC phase shift oscillator. [1M]
- g) What are the different types of power amplifiers? [1M]
- h) Compare class A and B push pull power amplifiers. [1M]
- i) Why Astable multivibrator is known as free running multivibrator? [1M]
- j) What is a Time Base Generator? [1M]

PART-B**(50 Marks)**

2. Derive the expression for current gain, input resistance, voltage gain and output Resistance of cascode amplifier with emitter resistance using simplified h parameter model. [10M]

OR

3. Explain various methods used for coupling in multistage amplifiers with their frequency response. [10M]
4. With a neat block diagram explain the basic concept of negative feedback amplifiers. [10M]

OR

5. An amplifier has a voltage gain of 600, $f_1=200\text{Hz}$, $f_2=400\text{Khz}$ and a distortion of 20% without feedback. Determine the amplifier voltage gain and D_f when a negative feedback is applied with feedback ratio of 0.01? [10M]

6. Explain Wien bridge oscillator with the help of neat circuit diagram. [10M]

OR

7. Explain Colpitt's oscillator and derive the equation for frequency of oscillation? [10M]
8. What is a power amplifier? Classify them based on the class of operation and also compare them. [10M]

OR

9. Draw the circuit diagram of series fed class-A power amplifier and explain its operation. [10M]
10. Describe with neat circuit diagram and waveform of collector coupled astable multivibrator. [10M]

OR

11. With the help of neat circuit diagram and waveforms explain transistor miller time base generator. [10M]
