## CMR ENGINEERING COLLEGE: : HYDERABAD
### UGC AUTONOMOUS
### II–B.TECH–II–Semester End Examinations (Supply) - February- 2024
### ELECTRONIC CIRCUIT ANALYSIS
### (ECE)

[Time: 3 Hours]                                                          [Max. Marks: 70]

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

Part A is compulsory which carries 20 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                                                              (20 Marks)

1. a) List the multistage amplifiers.                                        [2M]
   b) What are the merits of Cascode amplifier?                              [2M]
   c) How negative feedback affects on the amplifiers.                       [2M]
   d) Differences between positive and negative feedback amplifier.          [2M]
   e) List out the types of oscillators.                                     [2M]
   f) Classify LC type oscillators.                                          [2M]
   g) Define Q-factor.                                                       [2M]
   h) What is mean by synchronous tuning?                                    [2M]
   i) List the applications of astable multivibrator.                        [2M]
   j) What are the features of time base signals?                            [2M]

### PART-B                                                              (50 Marks)

2. In a single stage CE amplifier $R_S$=1 KΩ, $R_1$=50 KΩ, $R_2$=2 KΩ, $R_C$=1 KΩ, $R_L$=1.2    [10M]
   KΩ, $h_{fe}$=50 and $h_{ie}$=1.1KΩ. Find $A_I$, $R_i$, $R_o$ and $A_V$.

**OR**

3. Derive the expressions for higher and lower cut-off frequency of a multistage    [10M]
   amplifier.

4. Draw the circuit of a current series feedback and derive its input and output    [10M]
   resistances.

**OR**

5. Compare the characteristics of feedback amplifiers in all the four configurations.    [10M]

6. Derive the expression for frequency of oscillation and condition for sustained    [10M]
   oscillation of a Hartley oscillator.

**OR**

7. Draw the crystal oscillator and explain about piezoelectric effect.                [10M]

8. Derive the expression for conversion efficiency of a Class B Power amplifier.      [10M]

**OR**

9. Draw the circuit of a single tuned amplifier and explain its working.             [10M]

10. Explain the operation of Schmitt trigger with neat diagram and draw its waveforms.    [10M]

**OR**

11. Explain the operation of Transistor Miller time base generator circuit with neat    [10M]
    diagram.

************