

(Pages : 3)

J – 4698

Reg. No. :

Name :

Third Semester B.Tech. Degree Examination, May 2020

(2013 Scheme)

13.305 : ELECTRONIC CIRCUITS (T)

Time : 3 Hours

Max. Marks : 100

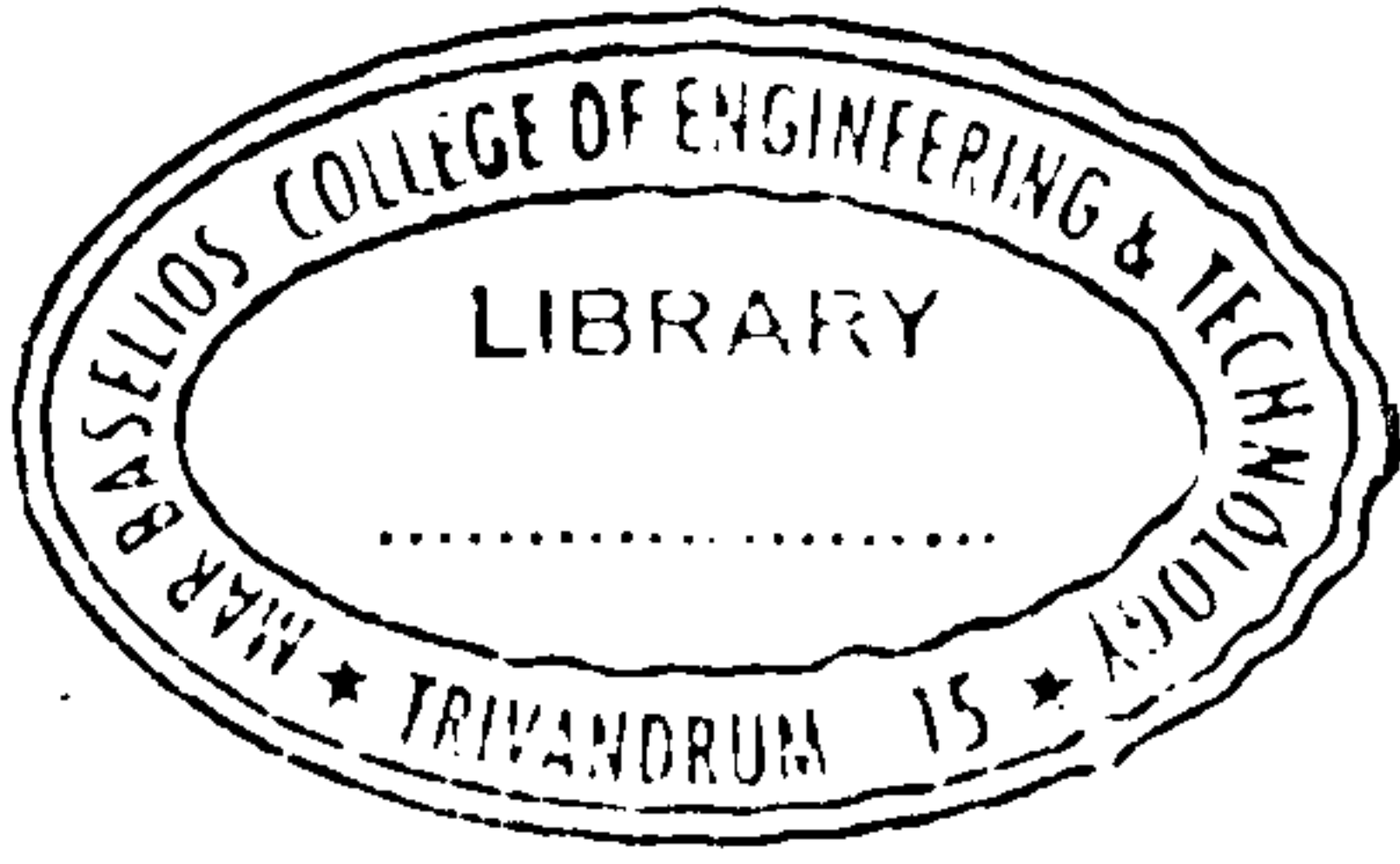
PART – A

Answer **all** questions. Each question carries **2** marks.

1. Define CMRR.
2. What is the need of short circuit protection?
3. Describe stability criteria in a feedback circuit.
4. What is Miller effect?
5. List the different types of distortion in power amplifiers.
6. What are the stability factors to be considered in transistor biasing?
7. What is distortion and efficiency of power amplifiers?
8. List any four advantages of negative feedback.
9. Compare Class B and Class C amplifiers.
10. Classify MOSFETs.

P.T.O.





PART – B

Answer **any one** questions from **each** Module. Each full question carries **20** marks.

Module – I

11. (a) Draw the high frequency hybrid Pi model for a transistor in CE configuration. Derive the expression for all the parameters. **15**
- (b) Explain about RC integrator and differentiator **5**

OR

12. (a) Compare the performance of a BJT as an amplifier in CE, CB and CC configuration. **10**
- (b) Derive the expression for small signal parameters of BJT. **10**

Module – II

13. (a) Explain the small signal equivalent circuit of MOS differential amplifier. **10**
- (b) Explain about different MOS biasing circuits. **10**

OR

14. (a) Explain different MOSFET Current source circuits **10**
- (b) Draw the circuit diagram of CD MOSFET amplifier and derive the expression for current gain, input impedance and output impedance. **10**

Module – III

15. (a) Explain current series feedback and voltage shunt feedback circuit and derive the expression for input impedance, output impedance and voltage gain. **15**
- (b) Explain about crystal oscillators. **5**

OR



16. (a) Explain the working of Hartley and colpitt's oscillator and derive the expression for frequency of oscillation. **15**
- (b) Explain about synchronous tuning. **5**

Module – IV

17. (a) Discuss the working of bootstrap sweep and derive the expression for its time period. **10**
- (b) Explain about short circuit protection circuit. **10**

OR

18. (a) Explain Class B and Class AB amplifier and derive the expression for efficiency and distortion. **12**
- (b) Explain the working of series voltage regulator with feedback. **8**

