

**ANNA UNIVERSITY COIMBATORE**  
**B.E./ B.TECH. DEGREE EXAMINATIONS: MAY / JUNE 2010**  
**REGULATIONS: 2008**  
**THIRD SEMESTER: ELECTRONICS & COMMUNICATION ENGINEERING**  
**080290011 - ELECTRONIC CIRCUITS I**

**TIME: 3 Hours**

**SKCET**  
**PART -A**

**Max.Marks : 100**

**(20 x 2 = 40 Marks)**

**ANSWER ALL QUESTIONS**

1. Define stability factor.
2. Mention the essentials of biasing circuits.
3. Define quiescent point.
4. List the different types of FET biasing circuits.
5. State miller's theorem.
6. Define the term CMRR.
7. List the advantages of Hybrid model.
8. What is an emitter follower circuit? Explain.
9. Define band width.
10. What is the voltage gain of cascade amplifier?
11. What is  $\beta$  cut-off frequency?
12. Compare FET amplifier and BJT amplifier.
13. List the classification of amplifiers.
14. Define circuit efficiency in power amplifiers.
15. What is called cross over distortion?
16. List the applications of class C amplifier.
17. What are the applications of voltage multiplier circuits?
18. Define ripple factor.
19. List various types of power supplies.
20. What is advantage of voltage regulators?

**PART-B**

**(5 x 12 = 60 Marks)**

**ANSWER ANY FIVE QUESTIONS**

- 21.a. Explain about fixed bias and derive stability factor. (8)  
b. Briefly explain the drain to gate bias circuit for enhancement MOSFET. (4)
- 22.a. Derive the current gain  $A_i$ , input impedance  $Z_i$ , voltage gain  $A_v$  and output Admittance  $Y_o$  for a two port hybrid network. (8)  
b. Compare CB, CE and CC configuration amplifiers. (4)
- 23.a. Explain the RC coupled amplifier with neat sketch and frequency response. (8)  
b. Draw the small signal model of FET for low frequency and high frequency. (4)
- 24.a. Explain the Class audio amplifier circuit and derive its efficiency. (8)  
b. Justify the importance of heat sink in power amplifier circuits. (4)
- 25.a. Describe the function of SMPS with suitable diagram. (8)  
b. Briefly explain about CLC filter with circuit. (4)
- 26.a. Explain the voltage divider FET bias circuit. Justify the performance of this circuit over the other bias circuits. (8)  
b. How is the leakage current suppressed by a diode compensation circuit? (4)
- 27.a. Describe the operation of bootstrapped darlington configuration amplifier. (8)  
b. Write short note on gain band width product. (4)
- 28.a. Discuss the operation of complementary symmetry classB push pull amplifier with suitable circuit. (6)  
b. Explain the operation of half-wave rectifier and derive ripple factor. (6)

\*\*\*\*\*THE END\*\*\*\*\*