

ANNA UNIVERSITY COIMBATORE  
 B.E. / B.TECH. DEGREE EXAMINATIONS : SEPTEMBER 2009  
 REGULATIONS – 2007  
 THIRD SEMESTER : ELECTRONICS & COMMUNICATION ENGG.  
 070290010 - ELECTRONIC CIRCUITS I

TIME : 3 Hours

Max.Marks : 100

PART – A

(20 x 2 = 40 MARKS)

ANSWER ALL QUESTIONS

1. Define stability factor.
2. What is meant by thermal run away
3. What is the difference between stabilization technique and compensation technique?
4. The self bias circuit is not suitable for bias stabilization in linear integrated circuits. Why?
5. Draw the hybrid model of common collector transistor configuration.
6. Why cascading is needed in transistor amplifiers.
7. Differentiate emitter follower from cathode follower.
8. Define Bandwidth
9. Define alpha cutoff frequency
10. What is meant by base-width modulation?
11. When does non-linear distortion occur in class-A amplifiers?
12. What do you understand by conversion efficiency?
13. Plot the frequency response characteristics of an RC coupled amplifier.
14. Define Rise time
15. Why electrolytic capacitors are often used as a bypass capacitors.
16. List the features of step voltage
17. Define PIV

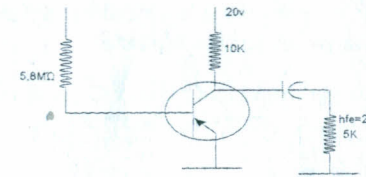
18. Derive the ripple factor for half wave rectifier
19. What are the disadvantages of emitter follower regulator?
20. Write about short circuit overload protection with suitable diagram.

PART – B

(5 x 12 = 60 MARKS)

ANSWER ANY FIVE QUESTIONS

21. a Locate the operating point of the circuit shown. (8)



- b Draw the circuit diagram of Darlington emitter follower (4)
22. Draw a cascode amplifier and its equivalent circuit. What are the special features of cascode amplifier?
23. Draw the transistor hybrid model in CE configuration and determine its h parameters from the characteristics
24. Derive all the resistive components in the hybrid  $-\pi$  model using h-parameters in CE configuration.
25. a Explain the operation of class B push pull amplifier with suitable diagram (8)
- b List the advantages of a push pull system (4)

26. a Explain the operation of transformer coupled audio power amplifier. (8)  
b What do you understand by cross over distortion? (4)
27. Explain in detail about the operation of the following type filters and derive the ripple factor for all  
(i) C filter  
(ii) L-C filter  
(iii)  $\pi$  section filter
28. Explain in detail about series voltage regulator.

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