

D 4041

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2007

Third Semester

(Regulation 2004)

Electrical and Communication Engineering

EE 1203—ELECTRONIC CIRCUITS-I

(Common to B.E. (Part-Time) Second Semester Regulation 2005)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A—(10 x 2 = 20 marks)

1. Draw the fixed bias and the self bias circuit
2. Define the three stability factors.
3. Define the various h-parameters in a transistor.
4. Define CMRR in a differential amplifier?
5. What is bandwidth of an amplifier?
6. Define rise time of an amplifier.
7. What is conversion efficiency in a power amplifier?
8. What is cross-over distortion in a power amplifier?
9. Define the ripple factor for a half-wave and full-wave rectifier.
10. Draw the block diagram of a switched mode power supply.

PART B—(5 x 16 = 80 marks)

11. (a) Derive equations for the three stability factors. (16)
(or)
12. (a) Discuss in detail how the current gain, input impedance, voltage gain and output impedance of a transistor amplifier can be obtained using h-parameters. (16)
(or)
- 12.(b) Discuss the operation of the emitter coupled differential amplifier. (16)
- 13.(a) Draw the hybrid-p common emitter transistor model at high frequencies and derive the values of all the components in terms of the h-parameters. (16)

(or)

13. (b) Discuss the low frequency response and high frequency response of an amplifier. (16)

14. (a) Discuss the transformer coupled audio power amplifier. (16)

(or)

14. (b) Discuss the class B push-pull power amplifier. (16)

15. (a) Discuss in detail the electronically regulated DC power supplies. (16)

(or)

15. (b) Derive the ripple factor for the following types of filters:
(i) C , (ii) L , (iii) $L-C$, (iv) $C-L-C$. (16)