ANNA UNIVERSITY OF TECHNOLOGY, COIMBATORE B.E. / B.TECH. DEGREE EXAMINATIONS : NOV / DEC 2011 REGULATIONS : 2008 THIRD SEMESTER 080290011 - ELECTRONIC CIRCUITS I (COMMON TO MEDICAL ELECTRONICS / ECE)

Time: 3 Hours

Max. Marks : 100

PART - A

(10 x 2 = 20 Marks)

ANSWER ALL QUESTIONS

- 1 What is the need for biasing the transistor?
- 2 Mention the considerations for the selection of appropriate operating point for a FET amplifier
- 3 Define input impedance of a transistor circuit
- 4 Define CMRR of differential amplifier
- 5 Define bandwidth of amplifiers
- 6 Draw the effect of multistage on cutoff frequencies of FET amplifier at high frequencies
- 7 Define conversion efficiency of power amplifier
- 8 Define total harmonic distortion
- 9 What is meant by regulated power supply?
- 10 Mention the types of filters used in the power supplies.

PART- B

ANSWER ALL QUESTIONS

 $(5 \times 16 = 80 \text{ Marks})$

11 a. Draw and explain the transistor load lines, Q point and its variation with various factors.

(OR)

- b. Explain the bias compensations using diode and thermistor compensators.
- 12 a. Obtain the expressions for gain, input impedance and output Impedance from small signal model of BJT common base amplifier

(OR)

- b. Draw and explain the emitter coupled differential amplifier. Obtain relevant expressions.
- 13 a. Obtain the expressions for cutoff frequencies of BJT amplifier from the analysis of low frequency response

(OR)

- With neat diagram explain the frequency response of multistage amplifier. Give the expressions for rise time and sag.
- 14 a. With neat diagram explain transformer coupled audio power amplifier. Explain the terms impedance matching and maximum power output.

(OR)

b. i) Explain the class B amplifier in detail
(8)
ii) With neat diagram explain push-pull amplifier
(8)

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15 a. Draw and explain the circuit and operation of full wave bridge rectifier. Derive the expressions for output voltage and ripple factor.

(OR)

(8)

(8)

- b. i) With block diagram explain the components of power supply
- ii) Explain LC filters in detail

*****THE END*****

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