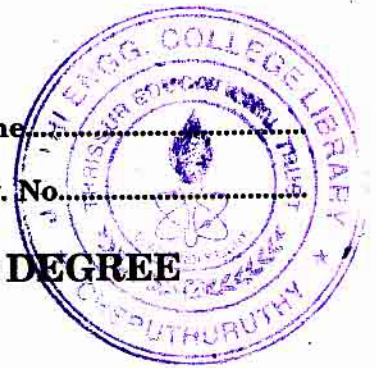


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Name.....

Reg. No.....



**THIRD SEMESTER B.TECH. (ENGINEERING) DEGREE  
EXAMINATION, DECEMBER 2012**

Computer Science Engineering

CS/IT 04 304 – BASIC ELECTRONIC ENGINEERING

(2004 Admissions)

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

1. (a) Draw an ideal current source. What is a practical one? What are the ways, in which the practical one introduces difficulties in realizing a source?
- (b) What are the various types of capacitor available? What is the range of each one of them? How are their values identified?
- (c) Draw the simplest biasing circuit for a BJT amplifier. What are its merits and demerits?
- (d) What are the various distortions that occur in an amplifier? What is the reason for each one of them?
- (e) What is the difference between AF and RF oscillators? Explain. Give an example for each.
- (f) Mention and explain the advantages and applications of Astable multivibrator.
- (g) Show that an operational-amplifier can be used as a summer.
- (h) Explain the following for an op-amp differential amplifier :
  - (i) CMRR ; (ii) SURR ; (iii) Slew rate.

(8 × 5 = 40 marks)

**Part B**

*Answer one question from each unit.*

- II. (a) Explain the operation of both types of full wave rectifiers with the help of circuit diagram. Compare their performance.

*Or*

- (b) What are the various parameters mentioned in a data sheet of transistors? Why are they required?

**Turn over**

- III. (a) (i) Draw a two (identical) amplifier and compare its frequency response with that of a single stage.
- (ii) Derive the expression for the new cut-off frequencies in terms of the fundamental ones.
- (8 + 7 = 15 marks)

*Or*

- (b) How is quiescent of amplifier selected? What is the precaution taken to stabilize the operating point? Draw circuit diagrams and explain.
- IV. (a) (i) Describe the applications of tuned voltage amplifier.
- (ii) Define and explain Resonance. Explain the types of resonance.
- (8 + 7 = 15 marks)

*Or*

- (b) Draw a neat circuit diagram of an RC oscillator. Explain its principle of operation. State the limitations, advantages and applications of it.
- V. (a) List and explain all the applications of operational-amplifier with neat circuit diagrams.

*Or*

- (b) Write short notes on :
- (i) Op-amp integrator.
- (ii) Logarithmic amplifier.

[4 × 15 = 60 marks]