D 51489 (Pages : 2) Name.....

Reg. No.....

THIRD SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, DECEMBER 2008

CS/IT 04 304 – BASIC ELECTRONICS ENGINEERING

(2004 Admissions)

Time : Three Hours Maximum : 100 Marks

Part A

I. (a) What are the properties of power diodes?

(b) What is CE amplifier?

(c) What is darlington pair?

(d) What are the properties of direct coupled amplifier?

(e) What is the need for modulation?

(f) Describe clamping circuit.

(g) Explain the term input impedance and output impedance of a op-amplifier.

(h) Draw the block diagram of 555 timer.

(8 × 5 = 40 marks)

Part B

II. (a) (i) Explain about energy bands in semiconductors.

(ii) Explain about different types of filters and its characteristics.

(8 + 7 = 15 marks)

Or

(b) (i) Explain the construction and operation of LED.

(ii) Compare the CE configuration with CB configuration.

(8 + 7 = 15 marks)

III. (a) (i) Draw the frequency response characteristics of RC coupled amplifier and explain the factors that influence the fall in gain at both lower and higher cut-off frequencies.

(ii) Write short notes on linear distortion.

(10 + 5 = 15 marks)

Or

(b) (i) Explain the working principle of FET Amplifier.

(ii) What are the disadvantages and uses of RC coupled amplifier?

(10 + 5 = 15 marks)

Turn over

IV. (a) (i) Explain with the neat sketch the operation of a Class-B push-pull amplifier.

(ii) What are the basic requirement of an oscillator?

(10 + 5 = 15 marks)

Or

(b) (i) What is Tuned voltage amplifier?

(ii) Explain the working of Hartley oscillator with neat sketch.

(5 + 10 = 15 marks)

V. (a) (i) Draw and explain the circuit of an ideal d.c. voltage follower and an a.c. voltage follower using op-amplifier.

(ii) Write short notes on active filters.

(10 + 5 = 15 marks)

Or

(b) (i) Explain how an op-amplifier can be used as an inverting amplifier and scale changer.

(ii) How an op-amp is used as zero crossing detector?

(10 + 5 = 15 marks)

[4 × 15 = 60 marks]