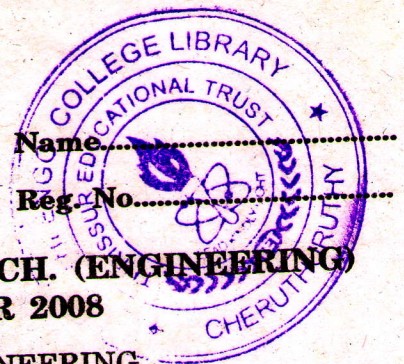


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**COMBINED FIRST AND SECOND SEMESTER B.TECH. (ENGINEERING)
DEGREE EXAMINATION, DECEMBER 2008**

ME/AM 04-109—BASIC ELECTRONICS ENGINEERING

(2004 admissions)

Time : Three Hours

Maximum : 100 Marks

Answer all the questions.

- I. (a) What are the types of LEDs ? Explain them with sketches.
(b) Explain the construction of PN junction.
(c) State and derive Barkhausen criteria.
(d) What is the need for filter ? Write the types of filter ?
(e) What is the need for memory ? Explain the applications of memory.
(f) Differentiate microcontrollers from microprocessors.
(g) Differentiate active transducer from passive transducer.
(h) Explain the principle of operation of thermocouple with a neat sketch. (8 × 5 = 40 marks)
- II. (a) Explain the construction, principle of operation and V-I characteristics of silicon controlled rectifier in detail.
Or
(b) Compare the characteristics and parameters of CE, CB and CC configurations BJT.
- III. (a) Draw a neat circuit diagram of BJT RC coupled amplifier and explain its principle of operation.
Or
(b) Draw a neat circuit diagram of diode bridge rectifier and explain its principle of operation.
- IV. (a) (i) Convert the following :—
1 $(1001\ 1001\ 1100\ 1010)_2 : (\text{---})_{16}$
2 $(463)_8 : (\text{---})_2$ (8 marks)
(ii) Draw a diagram of 4 : 1 Mux and explain. (7 marks)
Or
(b) Explain the internal architecture of 8085 μ p with its neat diagram.
- V. (a) Explain the following in detail :— (7 marks)
1 Displacement transducer. (8 marks)
2 Temperature measurement using RTDs.
Or
(b) Explain the principle and applications of induction and dielectric heating with neat diagrams. [4 × 15 = 60 marks]