

C 31717

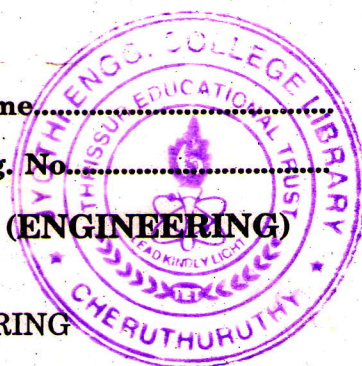
Name.....

Reg. No.....

**COMBINED FIRST AND SECOND SEMESTER B.TECH. (ENGINEERING)  
DEGREE EXAMINATION, JUNE 2007**

**ME/AM 04 109—BASIC ELECTRONICS ENGINEERING**

**(2004 Admissions)**



Time : Three Hours

Maximum : 100 Marks

*Answer all questions.*

- I. (a) Define  $\alpha$  and  $\beta$  of BJT. Obtain the relation between the two.  
(b) Differentiate Semiconductors from Conductors and Insulators.  
(c) Draw a neat circuit diagram of half wave rectifier and explain its principle.  
(d) Differentiate AF oscillator from RF oscillator.  
(e) Differentiate RAM for ROM. Explain the difference.  
(f) Explain the potential applications of microprocessors.  
(g) What is a strain gauge ? Explain its principle of operation and types.  
(h) Explain the principle of dielectric heating with a neat sketch.

(8 × 5 = 40 marks)

- II. (a) Explain the construction, principle of operation and types of LED with neat diagrams.

*Or*

- (b) Explain the V-I characteristics of PN junction diodes with neat diagrams.

- III. (a) Draw half wave rectifier and bridge rectifier circuits and explain their working in detail.

*Or*

- (b) Draw a neat circuit diagram of crystal oscillator and explain its principle of operation.

- IV. (a) Draw half adder and full adder circuits using basic gates. Explain them. Obtain their truth tables.

*Or*

- (b) Write notes on :

1 Memory.

(7 marks)

2 Microcontroller applications.

(8 marks)

- V. (a) What is LVDT ? Explain its principle of operation with a neat diagram.

*Or*

- (b) Explain the principles and applications of :

1 Thermocouple.

2 Resistance welding.

3 Capacitance transducer.

(3 × 5 = 15 marks)

[4 × 15 = 60 marks]