C 57528 (Pages 2) Name.....

Reg. No.....

COMBINED FIRST AND SECOND SEMESTER B.TECH (ENGINEERING) DEGREE EXAMINATION, JUNE 2009

Engineering

EC 04 108—BASIC ELECTRONICS

(EC, BM, BT, AI, IC)

[2004 admissions]

Time : Three Hours Maximum : 100 Marks

I. (a) Define and explain cyclotron angular frequency.

(b) Explain the characteristics and applications of Triode.

(c) What are the Trimmers ? Explain their characteristics and applications.

(d) Differentiate JFET from BJT.

(e) What is the need for biasing ? Explain in detail.

(f) Define stability factor. Derive an expression for stability factor.

(g) Explain the principle of operation of Half wave rectifier with a neat diagram.

(h) Define and explain :

(i) PIV.

(ii) Reverse breakdown voltage.

(8 × 5 = 40 marks)

II. (a) Draw the blockdiagram of CRO and explain its construction and principle of operation in detail. Also explain the potential applications of CRO.

Or

(b) Explain the principle of measurement of voltage and current with neat diagrams.

III. (a) Explain in detail the characteristics of fixed and variable capacitors. Also explain their applications in detail.

Or

(b) Explain the construction and principle of operation of JFET with neat sketches. Also explain its V I characteristics.

Turn over

IV. (a) Explain the need for biasing. Explain in detail the potential divider biasing technique with a neat sketch.

Or

(b) (i) Discuss the effect of Q - point location on allowable signal swing in detail. (7 marks)

(ii) Give an account on Bias Compensation. (8 marks)

V. (a) Draw a diode centre tapped full wave rectifier and explain its principle of operation. Obtain its efficiency.

Or

(b) Explain the design aspects and working principle of series voltage regulator with a neat diagram.

(4 × 15 = 60 marks)