

Roll No.

24004

B. Tech. Ist Semester "F Scheme"

Examination – December, 2009

BASICS OF ELECTRONICS

Paper : ECE-101-F

Time : Three hours]

[Maximum Marks : 100

Before answering the question, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt any five questions. Q. No. 1 which is compulsory. All questions carry equal marks.

1. (a) What is fermi level ? 3
- (b) How band width of an amplifier will be calculated ? 3
- (c) What are Radio & Audio frequency oscillators ? 3
- (d) What is slew rate ? Explain. 3
- (e) Differentiate between Latch and flip-flop. 3
- (f) Explain the working of Ammeter. 3
- (g) LCD. 2
2. (a) What is knee voltage and what is its significance ? 5
- (b) Differentiate between drift & diffusion current. 5
- (c) Draw and explain the V-I characteristics of diode with the help of diode equation of current. 10

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3. (a) Draw and explain the frequency response curve and working of R-C coupled circuit. 10
(b) Explain the concept of Cascaded Amplifier. Give suitable example. Derive an expression for the gain. 10
4. (a) Draw and explain the circuit and working of any LC oscillator. 10
(b) What is crystal oscillator? How it works? Draw its equivalent circuit and derive results for impedance, resonant frequency. 10
5. (a) Realize op-Amp as inverting adder, averages and scaling amplifier. 10
(b) Realize op-Amp as integrator circuit. 6
(c) What is the concept of virtual ground? 4
6. Write short notes on: 20
(a) SMPS.
(b) Inverter.
(c) Full adder.
7. Briefly describe: 20
(a) CRO,
(b) Signal Generator.
8. (a) How fourteen segment display works? Design a circuit for it. 10
(b) Enumerate the advantages of LED over LCD. 7
(c) Explain the speciality of dot matrix display. 3

9. (a) Enumerate the advantages of Dynamic & cattering LCD display cells. 10
- (b) Realize Ex-OR gate with four NAND gates only. 5
- (c) What is barkausen criterion ? Explain. 5