

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

24004-9,700-(P-3)(Q-9)(09)

P. T. O.

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 a crystal oscillator? How does it work? Draw its equivalent circuit and derive results for impedance, resonant frequency. 10
5. (a) Realize op-Amp as inverting adder, averager 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 does a fourteen-segment display work? 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

StudentSuvidha.com