

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (2009-2010 Batches) (Sem.-1,2)
BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

Subject Code : EE-101

Paper ID : [A0126]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C. have FOUR questions each.
3. Attempt any FIVE questions from SECTION B & C carrying EIGHT marks each.
4. Select atleast TWO questions from SECTION - B & C.

SECTION-A

1. Write briefly :

- a. State Kirchoff's current law.
- b. On what factors the resistance of a conductor depends?
- c. Define the average value of an AC.
- d. Define impedance of a series RLC circuit.
- e. What is commutator?
- f. Name various torques used in an indicating instrument.
- g. Define piezoelectric effect.
- h. Differentiate between PNP and NPN transistors.
- i. What are regulators ICs?
- j. Draw an OR gate using NAND gate.

SECTION-B

2. State and explain Kirchoff's voltage law and Ohm's law. What are limitations of these laws? Derive the relation for effect of temperature on the resistance of a conductor.
3. Derive the relation for the effective value of alternating current having sine wave. Explain the concept of power factor with the help of behavior of AC through RL series circuit showing various waveforms.
4. Explain the construction of a single phase transformer with each important component. Discuss the working principle and operation of a DC motor.
5. Give classification of various types of instruments and discuss in detail the operation of a permanent magnet moving coil ammeter.

SECTION-C

6. Explain the working principle of a capacitive transducer and a thermocouple with their specific applications.
7. Draw the VT characteristics of a thyristor. Explain the operation of a single phase diode rectifier having centre tapped transformer with the help of circuit diagram and waveforms.
8. Give the pin diagram of IC555 and explain its various applications.
9. Convert the decimal number 1167 in to binary, octal and hexadecimal number system. Explain the operation of a RS flip flop with the help of truth table.