R09

Code: 9A02304

B.Tech II Year I Semester (R09) Supplementary Examinations December 2015

BASIC ELECTRICAL & ELECTRONICS ENGINEERING

(Biotechnology)

Time: 3 hours Max. Marks: 70

(Minimum of two questions from each part should be chosen for answering FIVE questions)
All questions carry equal marks

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PART - A

1 (a) Explain the circuit elements Resistance, Inductance and Capacitance in detail.
(b) Three resistors R_1, R_2, R_3 are connected in series across a DC voltage source V. The total current through the circuit is I and derive the expressions for voltages V_1, V_2, V_3 across R_1, R_2 and R_3.

2 (a) Define and explain Time period, Amplitude, Cycle and Frequency.
(b) Show that power dissipated by a pure capacitor excited by a sinusoidal source is zero.

3 Derive the relation between phase and line values in a 3-phase balanced delta connected system with neat circuit and phasor diagrams.

4 (a) Explain open circuit characteristics of DC generator.
(b) Explain principle and operation of 3-phase induction motor.

PART – B

5 (a) Draw the circuit of bridge rectifier and explain the working of it. Give the advantages and disadvantages of this circuit.
(b) Draw the circuits for p-n junction diode for forward bias and reverse bias conditions. Explain the working of the diode under these conditions.

6 (a) Draw and explain two transistor equivalent circuit of SCR.
(b) Explain the operation of a single stage CE amplifier.

7 (a) List the applications of dielectric heating and also explain the principle of dielectric heating.
(b) Differentiate induction heating and dielectric heating.

8 Explain different types of focusing methods used in CRT.

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