

R07

Code: R7100506

B.Tech I Year (R07) Supplementary Examinations December/January 2015/2016

BASIC ELECTRICAL ENGINEERING

(Common to CSE, IT & CSS)

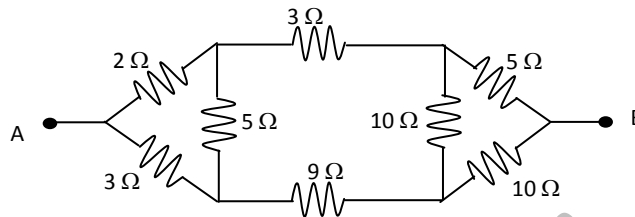
(For 2008 regular admitted batch only)

Time: 3 hours

Max. Marks: 80

Answer any FIVE questions
All questions carry equal marks

- 1 (a) State and explain Kirchhoff's laws.
(b) State and explain Faraday's laws of electromagnetic induction.
- 2 (a) State and explain superposition theorem.
(b) Find the equivalent resistance between the terminals A and B network shown in figure below.



- 3 (a) Define the terms:
(i) Magnetic flux.
(ii) Magnetic flux density.
(iii) Magnetomotive force.
(iv) Reluctance.
(b) Make comparison between electric circuit and magnetic circuits.
- 4 (a) Define and derive the expression for average value of a sinusoidal voltage wave form.
(b) An inductor of 50 mH is connected across 220 V, 50 Hz single phase supply. Calculate the reactance of the inductor rms value of current and maximum current.
- 5 Explain the working of a transformer at no load and full load conditions with neat diagrams.
- 6 (a) Derive the emf equation of DC generator.
(b) Why is commutator and brush arrangement necessary for the operation of DC generator?
- 7 (a) Explain the working principle of three phase induction motor.
(b) A 12-pole, 3-phase induction motor runs at 485 rpm on a 50 Hz supply. Calculate slip.
- 8 Explain the principle and operation of moving iron instruments with neat diagram.
