

R09**Code: 9A02301****B.Tech II Year I Semester (R09) Supplementary Examinations June 2016****ELECTRICAL ENGINEERING & ELECTRONICS ENGINEERING**

(Common to AE & ME)

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

PART – A

- 1 (a) Briefly explain network element classification.
(b) Obtain the equivalent capacitance, if two capacitors connected in series.
- 2 (a) Explain different types of DC motors with neat sketches.
(b) Write the applications of DC motors.
- 3 (a) Explain the principle of operation of 1- ϕ transformer.
(b) Derive the expression for voltage regulation of a 1- ϕ transformer.
- 4 (a) What is synchronous speed? Obtain the regulation of alternator by synchronous impedance method.
(b) What is slip? What happens if the induction motor runs at synchronous speed? Draw slip-torque characteristics of induction motor.

PART – B

- 5 (a) Explain the avalanche effect that accounts for reverse breakdown voltage of diode.
(b) Explain the operation of Full Wave Rectifier with and without capacitive filter.
- 6 (a) Explain the operation of PNP transistor as an amplifier.
(b) Explain the frequency response of CE amplifier with the help of neat sketch.
- 7 (a) What is theory of induction heating and mention its applications in industries?
(b) Briefly discuss about the generation and flow detection of ultrasonics.
- 8 (a) What is deflection sensitivity in CRO?
(b) What is a time base? State the need for time base in CRO.
