

B.Tech I Year (R09) Supplementary Examinations June 2017
ELECTRICAL ENGINEERING & ELECTRONICS ENGINEERING
(Computer Science & Engineering)

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) Define ohms law for resistive networks. A battery has an e.m.f. of 12.8 volts and supplies a current of 3.2A. What is the resistance of the circuit? How many coulombs leave the battery in 5 minutes?
(b) Explain the procedure for conversion of star to delta with suitable example.
- 2 (a) Draw and explain the principle of operation of three point starter.
(b) A 100 kW, 240 V shunt generator has a field resistance of 55Ω and armature resistance of 0.067Ω . Find the full-load generated voltage.
- 3 (a) Derive an EMF equation for single phase transformer.
(b) In a 50 kVA transformer, the iron loss is 500 W and full-load copper loss is 800 W. Find the efficiency at full-load and half-load at 0.8 pf lagging.
- 4 (a) Discuss how the regulation can be determined by synchronous impedance method.
(b) A 50 Hz, 4-pole, 3-phase induction motor has a rotor current of frequency 2 Hz. Determine:
(i) The slip. (ii) Speed of the motor.

PART – B

- 5 (a) Explain in detail various applications of PN-junction diode.
(b) Explain the operation of full wave rectifier circuit with neat sketch.
- 6 (a) Explain the PNP and NPN junction transistors with their construction.
(b) Explain about various necessary conditions of oscillators.
- 7 Explain the concept of dielectric heating and also discuss about its industrial applications.
- 8 With neat circuit, explain the principle of operation of cathode ray tube.
