B. Tech Common for all branches 2nd Semester

F. Scheme Examination,

May–2015

ELECTRICAL TECHNOLOGY

Paper–EE–101–F

Time allowed : 3 hours] *[Maximum marks : 100*

Note : *Attempt any five questions.*

1. (a) State Ohm's Law and Kirchoff's law. 5

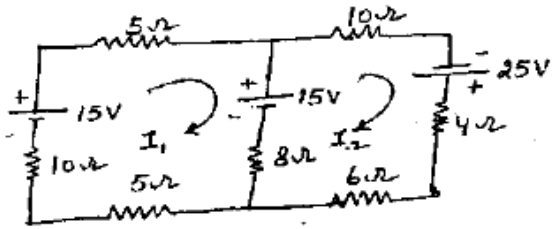
   (b) State the differences between series and parallel Resonance 5

   (c) Describe the relationship between phase and line voltages and currents in star connection with neat and clean phasor diagrams and equations. 5

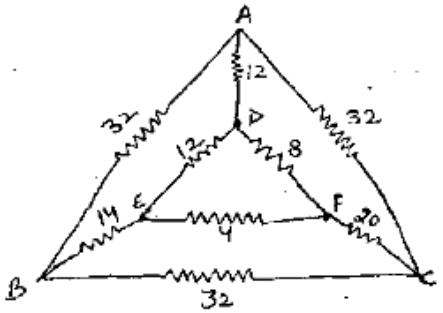
   (d) Define moving iron type Instruments. 5

Section–A

2. (a) Solve the network shown below using Loop-current method and find the current in each branch. 10



   (b) In the network shown, determine the resistance between A and B. 10

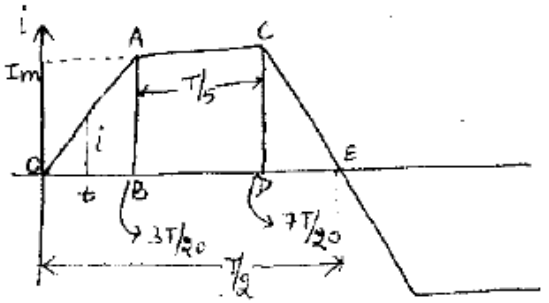


3. (a) Describe superposition and maximum power transfer theorem. 10

   (b) Give the proof of Star to Delta and Delta to Star transformation. 10

Section–B

4. (a) For the trapezoidal current waveform given below, determine the RMS value of current. 10



(b) The circuits A and B are connected in parallel to a 230 V, 50 Hz supply circuit A consists of resistance 20 ohms in series with an inductive reactance of 20 ohms and circuit B consists of resistance 40 ohms in series with a capacitive reactance of 20 ohms. Determine the

(i) current drawn by each circuit

(ii) total current drawn from the mains

Solve this by using phasor method. 10

5. Describe the condition of series resonance in detail. http://www.HaryanaPapers.com 20

Section–C

6. Describe Two-wattmeter method for power measurement using balanced-load. 20

7. Describe neatly the phasor diagrams of a loaded transformer for resistive, inductive as well as capacitive loads. 20

Section–D

8. (a) Describe constructional features of DC machines. 10

(b) Describe advantages of Rotating field system over stationary field system. 10

9. Describe the working principles of wattmeter and energy-meter in detail. 20