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B.Tech. 2nd Semester (F-Scheme) Examination,
May-2018

ELECTRICAL TECHNOLOGY

Paper-EE-101-F

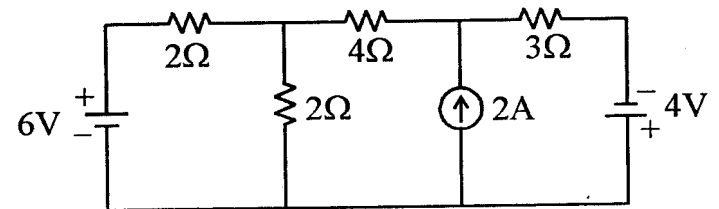
Time allowed : 3 hours] [Maximum marks : 100

Note : Question No. 1 is compulsory. Attempt five questions in all, selecting at least one question from each section.

1. (a) What is meant by linear and nonlinear networks ?
Explain it with examples. 5
- (b) Describe the importance of Q-sector of a circuit
with an example. 5
- (c) How short circuit test of transformer is
conducted ? Explain. 5
- (d) Briefly explain the working of moving coil
instruments. 5

Section-A

2. What is superposition theorem. Find the value of voltage
across resistance in the given circuit. 20



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3. (a) State and explain Millman's theorem. 10
 (b) State and explain Kirchhoff's laws for voltage and current. State the rules of each. 10

S 1-B

4. (a) Define and explain the terms mentioned below :
 (i) average value
 (ii) form factor
 (iii) peak factor 10

- (b) An a.c. circuit consists of resistance of 3Ω , and inductance of 0.02H , connected to a 220V , 50Hz . supply. Find the value of capacitor that can be placed in parallel with the inductive ckt. to produce the resonance. Find the current taken from the supply at resonance. 10

5. Two inductive coils are connected in parallel across a 200V , 50Hz . At the same frequency, their impedances are 6Ω and 10Ω respectively and their resistances are 2Ω and 3Ω respectively. Find the current in each coil, the total current, and the total power. 20

S 1-C

6. Draw and explain the circuit diagram and phasor diagram of a transformer at resistive load. 20

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7. (a) Explain two wattmeter method of power measurement in 3 phase AC system at balanced load. 10
 (b) A 3-phase, 440V , 50Hz . supply is connected to a star connected balanced load consisting of 100Ω resistor in each branch. Find the line current and power absorbed by the circuit. 10

Section-D

8. Write notes on : 10x2
 (i) Energy meter
 (ii) Synchronous machines
 9. (a) Explain how the 3-phase supply is generated in a 3-phase synchronous generator. 10
 (b) Illustrate various losses of D.C. machines. 10

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