1987

B.E. 1st Semester Examination,

December–2012

ELECTRICAL TECHNOLOGY

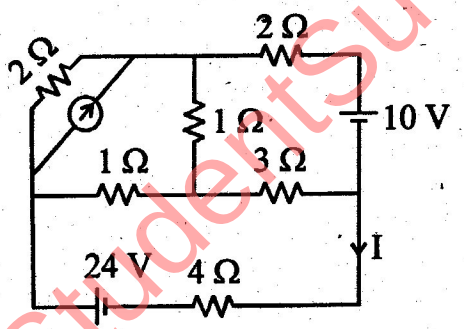
Paper–EE–101-E

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

***Note :** Attempt any five questions.*

1. (a) Define ohm's law. Also explain its limitations. 8

(b) Determine the current in the 4 Ω resistance of the circuit shown in fig. 12



2. (a) Define and prove R.M.S. value of a.c. voltage. 10

(b) A 100 V, 80 W lamp is to be operated on 230 volts 50 Hz a.c. supply. Calculate the

inductance of the choke required to be connected in series with lamp for its operation. The lamp can be taken as equivalent to a non-inductive resistance. 10

3. (a) State the advantages of D.C. polyphase supply system over single phase system. 10

(b) Derive the numerical relationship between line and phase currents for a balanced 3-phase delta connected load. 10

4. Explain working principle of Transformer. Also Derive its e.m.f. equation. 20

5. (a) What is working principle of synchronus motor ? 10

(b) Describe various parts of D.C. machines. 10

6. (a) Explain and derive Maximum power Transfer theorem. 10

(b) Prove Tellegen theorem. 10

7. (a) Differentiate between Series resonance and Parallel resonance. 12

(b) Write short note on Transient response of R.L. circuit with step function. 8

8. Do any *two* :

(a) Thevenin's theorem

(b) Energy meter

(c) Wattmeter. 20