Register Number :

Name of the Candidate :

6 0 6 4

B.E. DEGREE EXAMINATION, 2008

(COMPUTER SCIENCE AND ENGINEERING / INFORMATION TECHNOLOGY)

(THIRD SEMESTER)

COEC - 303 / ITEC - 302.
BASICS OF ELECTRICAL AND ELECTRONICS ENGINEERING

May] [Time : 3 Hours

Maximum : 60 Marks

UNIT - I

1. (a) State Kirchoff's second law. (4)

(b) For the circuit given in Fig. - 1 (b), find out the current flowing thro' 5 Ω resistance and power delivered by the source.

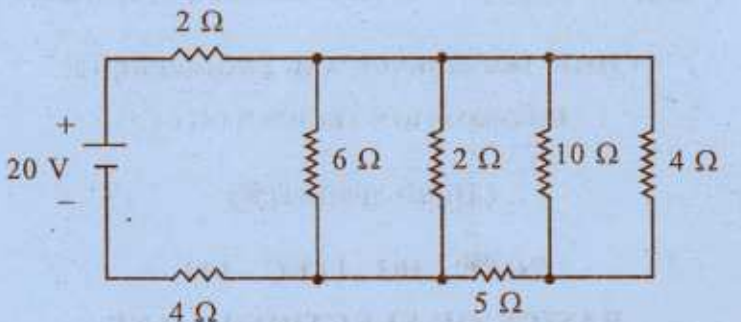

Fig. - 1 (b).

2. (a) What is meant by 'Power Factor' in an *ac* circuit? What is its importance? (4)

(b) A series RC circuit connected across an *ac* supply $\gamma = 141{\cdot}4 \sin wt$ dissipates 700 watts of power at 0·707 leading power factor. Find out the values of 'R' and 'C'. (8)

UNIT - II

3. (a) Starting from basics, derive an expression for EMF equation of a DC generator? (9)

(b) State the applications of DC series and shunt motors. (3)

4. (a) Why the rating of transformers is given in KVA? (3)

(b) Draw the equivalent circuit of a single phase transformers and explain the various terms. (9)

UNIT - III

5. (a) An induction motor having 8 poles runs on 50 Hz supply. If it operates at full - load at 720 *rpm*, calculate the slip. (4)

(b) Draw and explain the Torque - slip characteristics of a three phase squirrel cage induction motor. (8)

Turn over

6. (a) State the different methods of starting of single phase induction motor. (3)

(b) With suitable diagrams, explain the operation of DC servo motor. (9)

UNIT - IV

7. (a) What is meant by capacity of a cell ? In what units is it expressed ? (3)

(b) Explain the construction and characteristics of a nickel - cadmium ore. (9)

8. (a) State and explain the laws of illumination. (9)

(b) What is a voltage regulator ? (8)

UNIT - V

9. (a) What is meant by zener break down ? (3)

(b) Explain the input and output characteristics of a BJI in CE configuration. (9)

10. (a) With suitable diagrams, explain the construction and operation of JFET. (9)

(b) What is a photo diode ? (3)