

CBSE Question Paper - 2010

ELECTRICLA ENGINEERING

(Theory)

Class – XII

Time allowed: 3 hours

Maximum Marks: 60

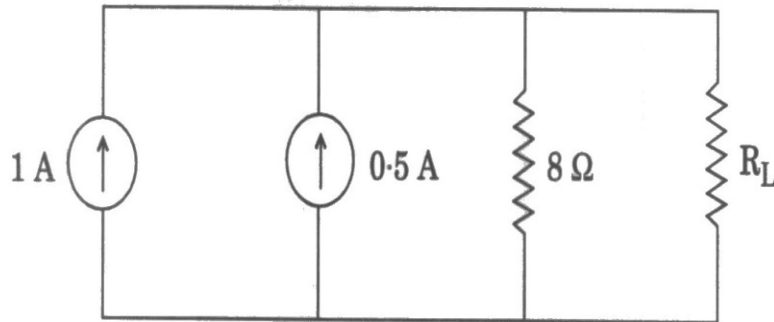
Instructions: Attempt all questions.

1. (a) Explain with diagrams what do you understand by 3
 - (i) In phase
 - (ii) Lagging
 - (iii) Leading

As applied to sinusoidal quantities.
 - (b) A coil when connected to D.C supply of 100 volt takes 10 Ampere. When it is connected to A.C supply of 100 volt, 50 Hz it takes 5 Ampere. Calculate Resistance and Inductance of the coil. 4
- OR
- (a) State Thevenin's Theorem and explain it with the help of simple network. 5
 - (b) What is resonance? 2
2. (a) Explain the significance of power factor in an A.C. circuit. 3

- (b) Calculate the value of load resistance R_L for maximum power transformation in the circuit shown below. Also calculate the value of maximum power.

2+2



3. What are the methods of measurement of power in a 3-phase system? Explain two wattmeter methods.

2+4

4. (a) Deduce the e.m.f. equation of a transformer.

5

- (b) Write merits and demerits of ordinary transformer and auto – transformer.

5

5. What is the principle of generation and motoring? Explain with block diagrams.

6

6. Explain with neat sketches the functions of each part of a D.C machine.

Write the relationship between terminal voltage and induced e.m.f. for motoring and generating action.

6+4

7. (a) Name various types of 1-phase motors.

- (b) Explain the construction and principle of shaded pole motor.

7

8. What are the advantages and disadvantages of 3-phase induction motors over 1-phase induction motors?

4