

B.E. Eighth Semester (Electrical Engineering) (CGS)
10474 : Professional Elective - II :
Generalised Machine Theory : 8 EE / 8 EP / 8 EL 04

P. Pages : 2

Time : Three Hours



AU - 3029

Max. Marks : 80

- Notes :
1. Answer **three** question from Section A and **three** question from Section B.
 2. Due credit will be given to neatness and adequate dimensions.
 3. Assume suitable data wherever necessary.
 4. Illustrate your answer necessary with the help of neat sketches.
 5. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION - A

1. a) Explain the concept of Kion's primitive machine.
b) Explain basic two pole machine in context with generalized theory.

OR

2. a) Explain with neat sketch transformer with movable secondary.
b) What are the characteristics of generalized machine theory.
3. a) Explain briefly transformer from rotating axes to stationary axes.
b) What are the application and limitations of generalized machine theory.

OR

4. a) State and explain advantages of 'Word-Leonard' system of speed control of D.C. Motors.
b) State and explain impedance matrix.
5. a) Explain with neat sketch mathematical model of separately excited generator.
b) Explain briefly 'metadyne transformer'.

OR

6. a) Explain cross field principle name three machines which work on this principle.
b) Explain cross field principle. Name three machines which work on this principle.

SECTION - B

7. a) Draw and explain the generalized mathematical model of synchronous machine.
b) Explain briefly transient state analysis of three phase alternator.

OR

8. a) Draw and explain phasor diagram of synchronous generator in the steady state.
b) Draw and explain power angle characteristics of three phase synchronous machine.
9. a) Draw the torque - slip characteristics of polyphase induction motor and clearly indicate the effect of change in rotor resistance.
b) Draw and explain the phasor diagram and equivalent circuit of a 3 phase induction motor.

OR

10. a) Compare deep bar rotor and double cage rotor induction motor. Also state their applications.
b) What are different types of high torque cage motor ? Explain any one in detail.
11. a) Explain construction and working of repulsion motor.
b) Explain steady state analysis of Schrage motor.

OR

12. a) Explain construction and working of Schrage motor.
b) Explain steady state analysis of repulsion motor.
