M.E. Second Semester (Electrical Engineering (Electrical Power System))

Electrical Machine Analysis & Control : EP 2202

P. Pages : 1 | AU - 3426

Time : Three Hours | Max. Marks : 80

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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. Illustrate your answer necessary with the help of neat sketches.
4. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION – A

1. a) With the help of suitable diagram describe the common essential features of rotating machine. 7

b) Draw the basic two pole machine diagrams of the following machines. 7
a) DC compound Machine.
b) Polyphase Induction Machine.
c) Synchronous Machine.

OR

2. Describe Kron's primitive Machines with basic structure of electrical machines. 14

3. Deduce Park's transformation relating the three phase current of synchronous machine to its corresponding d-q axes currents. Express 3-phase currents in terms of d-q axes currents and its inverse. 13

OR

4. Explain in detail the basic construction of DC machine with its various characteristics. 13

5. Explain in detail equivalent circuit of 3-ϕ I.M. 13

OR

6. Explain various transformation methods of 3-ϕ I.M. 13

SECTION – B

7. Explain how park transformation transform in a, b, c variables to d, q, o variables. 14

OR

8 Explain field oriented control and direct torque control of 3-ϕ I.M. 14

9. Explain the switch reluctance motor. 13

OR

10. Describe various power circuit configurations of electrical drive with all aspects. 13

11. What is the need of short circuit analysis? How to measure reactance's and time constants. 13

OR

12. Explain the various stability performance with its phasor diagram and characteristics. 13

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