

Total No. of Printed Pages:1

SUBJECT CODE NO:- H-1753
FACULTY OF ENGINEERING AND TECHNOLOGY
M.E. (Electrical Power System)
Electrical Machine Analysis & Modeling
(REVISED)

[Time: Three Hours]

[Max. Marks: 80]

Please check whether you have got the right question paper.

- N.B
- i) Attempt any two questions from each section.
 - ii) Assume suitable data wherever necessary.
 - iii) Figure's to the right indicates full marks.

Section A

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|-----|---|----|
| Q.1 | a) Assume linear magnetic circuit and derive the voltage equation also draw the equivalent ckt. | 10 |
| | b) Discuss the winding configuration in synchronous machine and draw its resultant mmf. | 10 |
| Q.2 | a) Derive the voltage equation for D.C machine in machine variables. | 10 |
| | b) Explain the dynamic characteristics of shunt motor supplied from constant voltage source. | 10 |
| Q.3 | a) Explain how transformation between two reference frames is possible. | 10 |
| | b) Apply qdo transformation to the resistive elements. | 10 |

Section B

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|-----|---|----|
| Q.4 | a) Derive voltage equation in machine variables for 2-pole 3-ph star connected symmetrical Induction machine. | 10 |
| | b) Derive the equations of transformation for rotor circuit of 3-ph symmetrical induction motor. | 10 |
| Q.5 | a) Derive torque equation in machine variables of 2-pole 3-ph salient pole synchronous machine. | 10 |
| | b) Explain the dynamic performance of salient pole synchronous machine during a three phase fault at machine terminals. | 10 |
| Q.6 | a) Explain the basic load modelling concept and explain any one model. | 10 |
| | b) Explain with neat diagram D.C. excitation system. | 10 |