Code No.: 3071

FACULTY OF ENGINEERING

B.E. III/IV Year (E & EE) II Semester, (Main) Examination, May/June, 2011

ELECTRICAL MACHINERY - III

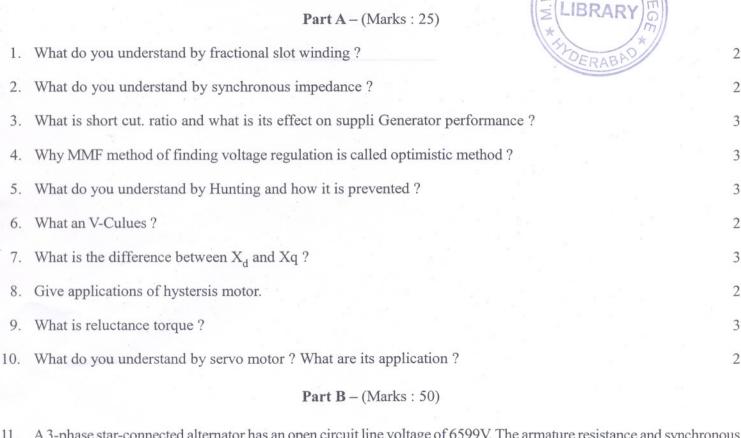
Time: 3 Hours

[Max. Marks: 75

Answer all questions from Part A.

Answer any five questions from Part B.

Part A - (Marks: 25)



- 11. A 3-phase star-connected alternator has an open circuit line voltage of 6599V. The armature resistance and synchronous questance are 0.6Ω and 6Ω per phase, respectively. Find terminal voltage and voltage regulation and δ if load current is 180A a p.f. of (a) 0.9 lagging (b) 0.8 leading. 10
- 12. A 5 MVA, 10,000V, 1500 rpm, 3-phase 50Hz alternator is operating on infinit bus-bar. Find synchronising power per machanical degree of angular displacement at (a) no-load, (b) full-load at rated voltage and 0.8 p.f. lagging. Take X as 20%. 10
- 13. A 3-phase star connectedd synchronous motor has a power input of 5472W at rated voltage. $Xs = 10\Omega$. If excitation voltage is adjusted clar to the rated voltage of 400v, find power angle, armature current are p.f. Neglect resistance.

14.	Der	ive the phase diagram of cylindrical rotor alternator. What is the effect of armature reaction and how i	t is in
	clud	led in phasor diagram? Draw phasor diagram for lagging, unity and leading p.f.s.	10
15.	(a)	Explain what is synchronous condenser. What is its application.	5
	(b)	Explain methods of starting of Synchronous motor.	5
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16.	(a)	Explain the operation of Hysteresis motor are give applications.	5

Explain in detail construction, operation characteristics of two-phase servo motor.

Explain the operation of repulsion motor are give applications.