Code No: R21041   **R10**   SET - 1

II B. Tech I Semester Supplementary Examinations, May/June - 2017
ELECTRICAL TECHNOLOGY
(Com. to ECE, EIE, BME)

Time: 3 hours   Max. Marks: 75

Answer any **FIVE** Questions
All Questions carry **Equal** Marks
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1.	a)	Explain the principle of operation of a DC generator	(8M)
	b)	A lap wound dc shunt generator has 50 slots with 15 conductors per slot. When the speed is 900 rpm, the emf generated is 300 V. At what speed should the machine be rotated if the generated emf is 500 V? Also find the flux per pole	(7M)
2.	a)	Derive the expression for torque in a dc machine	(7M)
	b)	Explain three point starter with a neat connection diagram	(8M)
3.	a)	Explain the no-load operation of a transformer	(7M)
	b)	A 300 KVA transformer having primary voltage of 3000 V at 50 Hz has 300 primary and 50 Secondary turns. Calculate i)the full load primary and secondary currents, ii) the no – load secondary induced emf, and iii)the maximum flux in the core (neglecting all losses)	(8M)
4.	a)	Draw and Explain the equivalent circuit of the single phase transformer	(7M)
	b)	Explain the constructional features of the transformer and give the importance of each	(8M)
5.	a)	List the advantages and disadvantages of a Three Phase Induction Motor	(6M)
	b)	Explain the concept of slip in three phase Induction motor	(4M)
	c)	A 10 pole induction motor is supplied by a six pole alternator, which is driven at 1400 rpm. If the motor runs with a slip of 2%, what is its speed?	(5M)
6.	a)	Explain the constructional features of the alternator	(7M)
	b)	Explain the different losses that occur in a Alternator and how can we reduce them	(8M)
7.	a)	Explain the Torque – Speed characteristics of a Single – phase Induction motor	(8M)
	b)	Explain the working of Synchros and give its applications	(7M)
8.		Write Short notes on the following: i) AC tachometers ii) Attraction type Moving iron Instrument	(15M)