Seat No.:	Enrolment No
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## GUJARAT TECHNOLOGICAL UNIVERSITY PDDC - SEMESTER- II • EXAMINATION - SUMMER 2015

Subject Code V21001 Date: 01/06/2015

Subject Code: A21901		Date:01/00/2013
C 1 4 AV	1 771	

**Subject Name:** Electrical Machines and Electronics

Time: 10.30am-01.00pm	Total Marks: 70

**Instructions:** 

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

Q.1	(a) (b)	Explain external characteristics of D. C. Generator.  Draw and explain the construction of a D. C. Generator.	07 07
Q.2	(a)	Why starter is required for dc shunt motor? Explain the working of a 3-point starter with necessary diagram.	07
	<b>(b)</b>	Discuss various methods of speed control of a dc shunt motor.	07
		OR	
	<b>(b)</b>	What is voltage regulation? Discuss voltage regulation by synchronous impedance method for Alternator.	07
Q.3	(a) (b)	Draw and explain the torque slip characteristics of 3- phase Induction Motor. Write short notes on 1-phase universal motor.	07 07
		OR	
<b>Q.3</b>	(a)	Write short notes on 1-phase shaded pole.	<b>07</b>
	<b>(b)</b>	Explain the three phase rotating magnetic field theory for induction motor.	07
Q.4	(a)	Derive the E.M.F equitation for single phase transformer.	07
	<b>(b)</b>	Give comparison between D.C and A.C transmission. What are the advantages of high voltage transmission?	07
		OR	
<b>Q.4</b>	(a)	Explain De-Morgan's theorem with equations and diagrams.	<b>07</b>
	<b>(b)</b>	With the help of neat diagram explain the architecture of 8085 microprocessor.	07
Q.5	(a)	What are the causes of poor power factor? Also explain the methods of power factor improvement.	07
	<b>(b)</b>	Explain full-wave rectifier with centre tape transformer.	07
		OR	
Q.5	(a)	What is tariff? Describe the various types of tariff.	07

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**(b)** Explain different types of equipments used in substation.

**07**