Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER–II EXAMINATION – SUMMER 2016

Subject Code:X21901 **Date:31/05/2016**

Subject Name:ELECTRICAL MACHINES & ELECTRONICS

Time:10:30 AM to 01:00 PM **Total Marks: 70**

Instructions:

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain the types of d.c. motors with diagram.	**07**
	(b)	Define transformer. Explain construction and working principle of 1-phase transformer.	**07**
Q.2	**(a)**	Explain construction and working principle of 3-phase induction motor.	**07**
	(b)	Explain characteristics of d.c. motors.	**07**
Q.3	**(a)**	Why 1-phase induction is not self start? How it made self start? Write the types of 1-phase a.c. motors.	**07**
	(b)	Explain construction and working principle of synchronous generator.	**07**
Q.4	**(a)**	What is a power factor? Explain the methods of power factor improvement.	**07**
	(b)	What is a tariff? Explain the types of tariff.	**07**
Q.5	**(a)**	What is a substation? Discuss about equipments which are use in substation.	**07**
	(b)	Explain half wave and full wave rectifier circuits with diagram.	**07**
Q.6	**(a)**	What is a logic gate? Explain OR gate, AND gate and NAND gate with logic symbol and truth table.	**07**
	(b)	What are the advantages and applications of op-amp? Draw the symbol of an op-amp, stating the functions of various op-amp terminals.	**07**
Q.7	**(a)**	What is transistor? Draw its circuit symbol. State the advantages and disadvantages of transistor over vacuum diode.	**07**
	(b)	Explain the comparison between d.c. and a.c. transmission system.	**07**

****