

GUJARAT TECHNOLOGICAL UNIVERSITY
BE – SEMESTER – VI (NEW).EXAMINATION – WINTER 2016

Subject Code: 2160910

Date: 26/10/2016

Subject Name: Electrical Drives

Time: 02:30 PM to 05:00 PM

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)** What is electric drive? Advantages of electrical drive. **07**
(b) Explain drive parameter, **07**
1) Loads with rotational motion.
2) Loads with translational motion.
- Q.2 (a)** Explain type-A and type-B chopper. **07**
(b) Explain the analysis of the PWM half bridge inverter. **07**
OR
(b) Explain the sliding mode control method. **07**
- Q.3 (a)** Explain the model referencing adaptive control (MARC) method. **07**
(b) Explain the torque equation for D.C motor. **07**
OR
- Q.3 (a)** Explain the Dynamic model of DC motor drive. **07**
(b) Explain speed torque characteristics of DC series motor, DC shunt motor, and PMDC motor. **07**
- Q.4 (a)** Different between VSI & CSI induction motor drives. **07**
(b) Explain d-q model of induction motor. **07**
OR
- Q.4 (a)** Explain advantages & disadvantages of traction drives. **07**
(b) Explain basic structure of solar and battery powered drives. **07**
- Q.5 (a)** Explain speed torque conventions and multi quadrant operation of drives. **07**
(b) Explain steady-state and transient stability of an electric drive. **07**
OR
- Q.5 (a)** Explain four quadrant chopper (Type-E chopper). **07**
(b) Explain single phase semiconductor & half controlled converter. **07**
