

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III • EXAMINATION – WINTER • 2014****Subject Code: 2133402****Date: 23-12-2014****Subject Name: Electrical Drives and Control****Time: 02.30 pm - 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) Compare A.C and D.C drives. **07**
(b) Explain Motors used in Coal & Mining Industry and Textile Industry. **07**
- Q.2** (a) Explain Mechanical Characteristics of DC motors. **07**
(b) Explain types of DC motors. **07**
- OR**
- (b) Explain Torque-slip characteristics for 3-Phase Induction motor. **07**
- Q.3** (a) A 4 pole, 3 phase, 50 Hz induction motor runs at a speed of 1470 rpm speed. **07**
Find the frequency of the induced emf (Fr) in the rotor under this condition.
(b) Explain Capacitor Start Induction motor. **07**
- OR**
- Q.3** (a) A 4 pole, 250volt, DC series motor has a wave connected armature with 200 **07**
conductors. The flux per pole is 25milliweber when motor is drawing 60
Ampere from the supply. Armature resistance is 0.15 ohm while series field
winding resistance is 0.2 ohm. Calculate the speed under this condition.
(b) Explain Electric braking of DC shunt motor. **07**
- Q.4** (a) Explain 3 Point Starter with neat diagram. **07**
(b) Explain the necessity of starter for 3 phase induction motors. **07**
- OR**
- Q.4** (a) Explain Direct on line starter with neat diagram. **07**
(b) Explain Star-Delta starter and Rotor resistance starter. **07**
- Q.5** (a) Explain Speed control of DC shunt motor. **07**
(b) Explain Half bridge inverter with inductive load. **07**
- OR**
- Q.5** (a) Explain voltage frequency speed control method for induction motor. **07**
(b) Compare chopper and Controlled rectifiers. **07**
