

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER- V(OLD) EXAMINATION – SUMMER 2019****Subject Code:150901****Date:19/06/2019****Subject Name:Electrical Machine - II****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) Explain the Parallel operation of 3-phase transformer. **07**
(b) Discuss different methods of speed control of 3-phase Induction motor. **07**

- Q.2** (a) Explain cogging effect and crawling effect in detail. **07**
(b) Explain the polarity test in 3-phase Transformer. **07**

OR

- (b) Why we require starters for 3- phase induction motors? Explain Auto-transformer starter with necessary circuit diagram. **07**

- Q.3** (a) Describe the construction and working of a double-cage induction motor. **07**
(b) Explain principle, advantages and applications of Linear Induction Motor. **07**

OR

- Q.3** (a) Why a 1-phase induction motor is not self starting? Explain the starting methods for single phase induction motor in brief. **07**
(b) Explain Scott connection for transformer with diagram. **07**

- Q.4** (a) Discuss the doubly fed induction motor with its advantages and disadvantages. **07**
(b) Explain the Sumpner's test in 3-phase transformer. **07**

OR

- Q.4** (a) A squirrel cage induction motor when started by means of a star-delta starter takes 180% of full load line current and develops 35% of full load torque at starting. Calculate the starting torque and current in terms of full load values, if an auto transformer with 75% tapplings were employed. **07**
(b) Discuss the construction, working principle and applications of shaded pole induction motor. **07**

- Q.5** (a) Explain working principle, construction of Repulsion motor. **07**
(b) Explain construction of welding transformer. How does it differ from power transformer? **07**

OR

- Q.5** (a) Explain working principle and construction of scharge motor. **07**
(b) Explain the construction, working principle and applications of induction generator. **07**
