Techno India NJR Institute of Technology

Academic Administration of Techno NJR Institute

Syllabus Deployment

Name of Faculty: Dr Abrar Ahmed Subject Code: 4EE4-21

Lab: Electrical Machine – II Lab

Department: Department of Electrical Engineering (EE & EEE) SEM: IV

Total No. of Lab: 12

COURSE OUTCOMES HERE

Atthe end of this course students will be able to:

CO1: To study various types of starters used for 3 phase induction motor.

CO2: To perform load test on 3-phase induction motor and calculate torque, output power, input power, efficiency, input power factor and slip for various load settings.

CO3: Draw the circle diagram and compute the following (i) Max. Torque (ii) Current (iii) slips (iv) p. f. (v) Efficiency.

CO4: To study effect of variation of field current upon the stator current and power factor of synchronous motor andPlot V-Curve and inverted V-Curve of synchronous motor for different values of loads

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| Lab No. | Topic |
| 1 | To study various types of starters used for 3 phase induction motor. |
| 2 | To connect two 3-phase induction motor in cascade and study their speed control. |
| 3 | To perform load test on 3-phase induction motor and calculate torque, output power, input power, efficiency, input power factor and slip for various load settings. |
| 4 | To perform no load and blocked rotor test on a 3-phase induction motor and determine the parameters of its equivalent circuits. |
| 5 | Draw the circle diagram and compute the following (i) Max. Torque (ii) Current (iii) slips (iv) p. f. (v) Efficiency. |
| 6 | Speed control of 3- Φ Induction Motor. |
| 7 | To plot the O.C.C. & S.C.C. of an alternator. |
| 8 | To determine Zs, Xd and Xq by slip test, Zero power factor (ZPF)/ Potier reactance method. |
| 9 | To determine the voltage regulation of a 3-phase alternator by direct loading. |
| 10 | To determine the voltage regulation of a 3-phase alternator by synchronous impedance method. |
| 11 | To study effect of variation of field current upon the stator current and power factor of synchronous motor andPlot V-Curve and inverted V-Curve of synchronous motor for different values of loads. |
| 12 | To synchronize an alternator across the infinite bus and control load sharing. |

**TEXT/REFERENCE BOOKS**

1. Electrical Machines Book by A.V.Bakshi U.A.Bakshi A.P.Godse
2. Theory & Performance of Electrical Machines Book by J. B. Gupta.