NITC/EED/GKP/2022

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DEPARTMENT OF ELECTRICAL ENGINEERING

FIRST SEMESTER M.TECH (MONSOON 2022) END SEMESTER EXAMINATION

EE6303D DYNAMICS OF ELECTRICAL MACHINES

Time: Three Hours *Answer all questions.* **Maximum: 50 Marks**

1. Using primitive machine equations, develop the expression for torque generated in squirrel cage induction machine. [10 Marks]

2. Define 'Theorem of Constant Flux Linkages'. And develop the expression for transient reactance of synchronous machine under large signal transient event. [10 Marks]

3. Develop the steady state impedance matrix of an interconnected system of alternator supplying a synchronous motor [10 Marks]

4. With necessary dynamic equation, discuss the synchronous and damping torques generated in a synchronous machine during small oscillation [07 Marks]

5. Discuss the approach of computing eigen values and eigen vector of an induction machine using primitive model [06 Marks]

6. Discuss the significance of arbitrary reference frame and its selection while developing dynamic model of a machine [07 Marks]