Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐   **Total No. of Pages : 01**

Total No. of Questions : 08

M.Tech. Electrical (Power System) (Sem.–1)
POWER SYSTEM DYNAMICS - I
Subject Code : EEPS-102-18
Paper ID : [75732]

Time : 3 Hrs.   **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :
1.Attempt any FIVE questions out of EIGHT questions.
2.Each question carries TWELVE marks.

1. Draw the stator and rotor circuits of a synchronous machine and derive the basic equations of stator and rotor of synchronous machine.

2. Write a detailed note on Philips-Heffron model for excitation system.

3. Explain the small signal stability of single machine infinite bus system with classical generator model.

4. With the help of block diagram give the structure of a Power System stabilizer. Explain in detail various components in it.

5. Derive the expression of voltage equations in case of synchronous machine in terms of modeling.

6. Why Park's transformation is required? Apply it to transform electrical and mechanical equations of synchronous machine.

7. Explain the mathematical modeling of induction motor starting from fundamental equations.

8. Explain the block diagram representation of small signal model of single machine infinite bus system with K constants.