Roll No. | | | | | | | | | | | | | **Total No. of Pages: 02**

Total No. of Questions: 08

M.Tech. (EE) (Sem. – 2)

POWER SYSTEM DYNAMICS-II

Subject Code: MTEE-201-18

M Code: 76100

Date of Examination: 13-12-2022

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. a) Distinguish between small signal and large signal stability of a system.

   b) What are assumptions made in modelling of synchronous machine in stability analysis? Explain their importance also.

2. a) What are the effects of damper in synchronous machine? Discuss its functioning.

   b) A two pole 50Hz, 11kV turbo alternator has a ratio of 120MW, power factor0.86 lagging. The rotor has a moment of inertia of 10,000kgm^2. Calculate H andM.

3. a) Discuss the large signal rotor angle stability of a synchronous machine connected to an infinite bus.

   b) What are the features of an automatic voltage regulator? Discuss the operation of an AVR.

4. a) Discuss the small signal stability for a regulated system. Justify your answer also.

   b) Explain features of primary and secondary stability control techniques.

5. a) Differentiate between various techniques of stability enhancement.

   b) Obtain the simplified model of a single machine connected to an infinite bus. (6+6)

6. a) Explain the methods for mitigating stability problems using a power system stabilizer.

   b) Discuss the methods of resynchronization in asynchronous operation of machines.

7. a) Write the importance of the study on voltage collapse. How to prevent it?

   b) Where AGC system is widely used to improve the stability of power system.

8. Write short notes on:

   a) Effect of damper

   b) Dynamic equivalent & coherency system

   c) Sub-synchronous resonance. (4x3)

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.