SHRI RAMSWAROOP MEMORIAL UNIVERSITY

End Semester Examination (2021-22)-Odd Semester

M. Tech. (Power System Engineering) – I Year (I Sem)	
Course Name: Power System Stability & Control	**Code: MEE1003**
Time: 02 Hours	**Max Marks: 60**

University Roll No.															
(To be filled by the Student)															

Note: Please read instructions carefully:

a) *The question paper has 03 sections and it is compulsory to attempt all sections.*

b) *All questions of Section A are compulsory; questions in Section B and C contain choice.*

Section A: Very Short Answer type Questions **Attempt all the questions.**		**BL**	**CLO**	**Marks (10)**
1.	What is the requirement of excitation system?	BL1	CLO1	02
2.	Why tie-line frequency control is important?	BL1	CLO 2	02
3.	Illustrate the source of reactive power.	BL2	CLO 3	02
4.	What is power system stabilizer?	BL1	CLO 4	02
5.	What is transient stability?	BL1	CLO 4	02
Section B: Short Answer Type Questions **Attempt any 03 out of 06 questions.**		**BL**	**CLO**	**Marks (30)**
1.	Briefly explain the different types of excitation system.	BL2	CLO 1	10
2.	What is frequency bias tie line control?	BL1	CLO 2	10
3.	What is active power? Explain power transfer equation form one bus to another bus.	BL2	CLO 3	10
4.	What is power system stability? Briefly explain the classification of power system stability.	BL2	CLO 4	10
5.	Discuss in detail about the factors affecting transient stability of the system.	BL2	CLO 4	10
6.	Briefly explain hydraulic turbine system and its types.	BL2	CLO1	10
Section C: Long Answer Type Questions/Case Study **Attempt any 01 out of 04 questions.**		**BL**	**CLO**	**Marks (20)**
1.	Develop the complete block diagram representation of a load frequency control of an isolated power system.	BL3	CLO 2	20
2.	A 60 Hz, 4 pole turbo-Generator rated 100MVA, 13.8 KV has inertia constant of 10 MJ/MVA. (a) Determine stored energy in the rotor at synchronous speed. (b) If the input to the generator is suddenly raised to 60 MW for an electrical load of 50 MW, determine rotor acceleration.	BL5	CLO 3	20
3.	Define and explain the swing equation for a machine connected to an infinite bus system.	BL5	CLO 3	20

4.	Explain in detail, equal area criterion for transient stability analysis.	BL5	CLO 4	20
