

ANURAG Engineering College

(An Autonomous Institution)

IV B.Tech II Semester Regular/Supplementary Examinations, April - 2024

**FLEXIBLE AC TRANSMISSION SYSTEMS
(ELECTRICAL & ELECTRONICS ENGINEERING)****Time: 3 Hours****Max. Marks: 75****Section – A (Short Answer type questions)****(25 Marks)****Answer All Questions**

	Course Outcome	B.T Level	Marks
1. Explain the need of transmission interconnections?	CO1	L2	2M
2. List the benefits of FACTS controllers?	CO1	L1	3M
3. What is a Current Source Converter?	CO2	L1	2M
4. What is a PWM Converter?	CO2	L1	3M
5. List the methods of controllable VAR generation.	CO3	L1	2M
6. Discuss the improvement of transient stability with midpoint voltage regulation.	CO3	L2	3M
7. Show the V-I characteristics of TSR and TCR.	CO4	L2	2M
8. Explain the operating principle of SVC.	CO4	L2	3M
9. Explain the operating principle of GCSC.	CO5	L1	2M
10. Comparison between TSSC and TCSC?	CO5	L2	3M

Section B (Essay Questions)**Answer all questions, each question carries equal marks.****(5 x 10M = 50M)**

11. A) Explain the power flow in AC meshed system and parallel paths.	CO1	L2	10M
OR			
B) Explain about various types of FACTS controllers?	CO1	L2	10M
12. A) Explain in detail operation of voltage source three level converter and harmonic in it.	CO2	L3	10M
OR			
B) Explain the operation of 12 pulse for transformer connections.	CO2	L3	10M
13. A) Explain the objectives of shunt compensation in today's power system in detail.	CO3	L2	10M
OR			
B) Why switching type converter generate and absorb reactive power? Explain one var generator with relevant control scheme.	CO3	L2	10M
14. A) Describe the transfer function and dynamic performance of SVC and STATCOM.	CO4	L3	10M
OR			
B) Describe the principle of operation of STATCOM with appropriate control scheme.	CO4	L3	10M
15. A) Explain how series compensation improves	CO5	L2	10M
i) Steady state power limit ii) Voltage Stability			
iii) Transient Stability iv) Power Oscillation damping			
OR			
B) Illustrate the Thyristor Switched Series Capacitor with waveforms and its characteristics.	CO5	L2	10M