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**SUBJECT CODE NO:- H-1673**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**M.E. (Electrical Power Systems)**  
**Flexible AC Transmission**  
**(REVISED)**

[Time: Three Hours]

[Max.Marks: 80]

- N.B Please check whether you have got the right question paper.  
 1) Solve any two questions from each Section.  
 2) Assume suitable data whether necessary
- Section A**
- Q.1 a) Explain the operation of TC SC with neat sketches. 10  
 b) What are the power flow and dynamics stability considerations of transmission interconnection? 10
- Q.2 a) Explain in detail the objectives and concept of shunt compensator. 10  
 b) Describe the working principle of the two types of static VAR compensator with neat schematic diagram. 10
- Q.3 Write short note on any four. 20  
 1) Thyristor switched series capacitor.  
 2) Series compensator  
 3) Various FACTS controller  
 4) Comparison of HVDC & FACTS  
 5) Application of STATCOM.

**Section B**

- Q.4 a) Explain the basic principle and control capability of UPFC. 10  
 b) How to improve stability with phase angle and voltage regulators? 10
- Q.5 a) Explain in details the working of IPFC with neat diagram. 10  
 b) Explain in detail NGH-SSR damping scheme. 10

Q.6 Write short note on any four

20

1. Hybrid phase angle regulators.
2. TCVR
3. Thyristor controlled braking resistor
4. Multifunctional FACTS controller
5. Sub synchronous resonance.