

Code No: B5404, B4904

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.TECH II - SEMESTER EXAMINATIONS, APRIL/MAY 2012
FLEXIBLE AC TRANSMISSION SYSTEMS (FACTS)
(COMMON TO POWER ELECTRONICS & ELECTRIC DRIVES, ELECTRICAL
POWER ENGINEERING)**

Time: 3hours

Max. Marks: 60

**Answer any five questions
All questions carry equal marks**

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1. Discuss the different limitations of present power system. How FACTS controllers are useful to overcome these limitations?
- 2.a) Explain the principle of operation of voltage source converter.
b) Compare the advantages and disadvantages of voltage source converters and current source converters.
3. Explain the principle of 3-level voltage source converter with relevant waveforms.
4. What are the objectives of shunt compensation? Explain each of them clearly.
5. Mention different methods of controllable VAR generation. Describe the principle of operation of FC-TCR SVC with appropriate control scheme.
6. Discuss the steady state V-I characteristics of SVC and STATCOM and their dynamic performance.
7. Explain the various objectives of series compensation in detail.
8. Write about the following:
 - a) Thyristor controlled series capacitor (TCSC)
 - b) GTO thyristor controlled series capacitor (GSC).

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