

**Power Electronics Applications to Power Systems***Time : Three Hours***RGPVonline.com***Maximum Marks : 70*

- Note:* i) Attempt any Five questions.  
ii) All questions carry equal marks.

1. a) ✓ Discuss about reactive power capability of an alternator.  
b) ✓ Discuss about reactive power transmission and associated difficulties.
2. a) ✓ Explain transmission line model and loadability.  
b) ✓ Discuss about models of OLTC and phase shifting transformer. **RGPVonline.com**
3. a) ✓ Discuss about generation shift distribution factors.  
b) ✓ Discuss about power systems security levels.
4. a) ✓ Discuss about contingency selection and evaluation.  
b) ✓ Discuss about precontingency corrective rescheduling.
5. a) Discuss briefly about proximity indicators.  
b) Discuss about Jacobian participation factors based on model analysis and application.

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6. a) ✓ Give a brief description and definition of FACT's controllers. **RGPVonline.com**  
b) ✓ Discuss the configuration and operating characteristics of TCR.
7. a) ✓ Give the basic principle and different mode of operation of TCSC.  
b) Analyse variable reactance model and transient stability model of TCSC. **RGPVonline.com**
8. Write short notes on any two of the following:  
a) ✓ Regulated shunt compensation  
b) ✓ Load flow study  
c) Compare SVC's

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