Register Number: ……..

**M.E DEGREE EXAMINATIONS: NOV/DEC 2012**

Third Semester

**POWER ELECTRONICS & DRIVES**

PED555: Flexible Ac Transmission System

**Time: Three Hours** **Maximum Marks: 100**

**Answer all the Questions:-**

**PART A (10 x 2 = 20 Marks)**

1. What are the different methods to control how of power in a parallel path in electrical power systems?
2. What are the factors which limit loading capability?
3. State objective of series compensation.
4. In order to control both active & reactive power flow explain how to inject a voltage in series with line?
5. Why VSC is preferred over CSC?
6. What are the different types of losses in STATCOM?
7. Give the block diagram for a generalized IPFC.
8. Explain how a UPFC is different than a simple VSC.
9. Give the objective of NGH-SSR damping scheme
10. Draw the basic control circuit of TCBR.

**PART B (5 x 16 = 80 Marks)**

11. a) (i) By controlling the magnitude of voltage explain how the reactive power control is possible? (8)

    (ii) What are the different parameters to control power flow in ac systems given their relative importance? (8)

**(OR)**

b) Write short note on a) Thermal capability b) Dielectric capability c) Stability limit of a power system.

12. a) Explain with a neat sketch and waveforms the TCSC type of series controller.

**(OR)**

b) Explain with a neat sketch and waveforms the SSSC type of series controller.

13. a) Explain the different Methods of controllable VAR Generator.

**(OR)**

b) (i) Explain the working principle & V – I characteristics of TCR. (8)

(ii) Explain the working principle & V – I characteristics of TSC. (8)

14. a) By means of an block diagram simulate a generalize IPFC which can be operated as a FACTS Controller.

**(OR)**

b) Explain in detail about the UPFC scheme used as a FACTS Controller.

15. a) Explain in detail the phenomenon of sub synchronous resonance (SSR) with an example

**(OR)**

b) (i) How TCBR is used to improve the transient stability. (8)

(ii) Explain in detail the working of Thyristor Controlled Voltage Regulator. (8)

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