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BIEEE-008

B.Tech. ELECTRICAL ENGINEERING (BTELVI)

00981

Term-End Examination

December, 2013

BIEEE-008 : FLEXIBLE AC TRANSMISSION SYSTEM

Time : 3 hours *Maximum Marks : 70*

Note : Attempt any seven questions. All questions carry equal marks. Assume missing data, if any.

1. With the help of necessary phasor diagrams, discuss the concept of AC power flow control in a transmission line for a simple two machine system. **10**

2. Explain the operation of STATCOM as a FACTS device. Also distinguish between the features and characteristics of SVC and STATCOM. **10**

3. With the help of necessary circuit diagram, discuss the operation and control of unified power flow controller. **10**

4. Describe the following in brief : **10**
   (a) Thyristor controlled braking resistor
   (b) Thyristor controlled voltage regulator

5. Write in detail an **any two** of the following : **2x5=10**
   (a) Independent real and reactive power flow control.
   (b) Interline power flow controller.
   (c) Benefits of FACTS Transmission line compensation.

6. What is series capacitor compensation ? Distinguish between TSSC and SSSC with reference to their principle of operation and applications. **10**

7. Explain the phase angle control method of series compensation along with necessary diagrams and equations. **10**

8. Enumerate the various custom power compensation devices. Also explain any one of them in brief. **10**

9. Briefly describe the operation and control of TCPAR as a FACTS device. **10**

10. What are the various constraints of maximum trasmission line loading ? Explain with the help of necessary diagrams and equations. **10**