

**B.Tech. – VIEP – ELECTRICAL ENGINEERING  
(BTELVI)**

**Term-End Examination**

**June, 2019**

00525

**BIEEE-008 : FLEXIBLE AC TRANSMISSION SYSTEM**

*Time : 3 hours*

*Maximum Marks : 70*

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**Note :** Attempt **five** questions in all. All questions carry equal marks. Use of scientific calculator is permitted.

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1. (a) Explain the factors which limit loading capability of a transmission line. What is the necessity of compensation in a transmission system ? 7
- (b) What is series compensation ? What is it provided for ? Give the advantages and problems associated with it. 7
2. (a) What is passive compensation ? Compare series and shunt compensators. 6
- (b) Identify the utility of FACTS devices in power network. 8
3. (a) Explain the principle and usefulness of flexible AC transmission system. 6
- (b) State the objectives of voltage and phase angle regulators. 8

4. (a) What are the different parameters to control power flow in AC systems ? Explain, giving their relative importance. 6
- (b) What is the importance of storage in case of converter based FACTS devices ? 8
5. (a) Why is shunt compensation preferred over series compensation ? 7
- (b) For what purpose are series and shunt compensation provided in EHV lines ? 7
6. (a) Explain in detail the major problem associated with a series capacitor compensator. 7
- (b) What do you mean by Flexible AC Transmission System (FACTS) ? Classify FACTS devices on the basis of their connection. 7
7. (a) Explain the basic concept of phase angle regulator with the help of a phasor diagram. 7
- (b) Differentiate clearly between UPFC and IPFC. 7
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