

**SUBJECT CODE NO:- P-8208**  
**FACULTY OF ENGINEERING AND TECHNOLOGY**  
**M.E. (Electrical Power Systems) Examination May/June 2017**  
**Flexible AC Transmission**  
**(Revised)**

[Time : Three Hours]

[Max Marks :80]

Please check whether you have got the right question paper.

N.B

- i) Solve any two Questions from each section.
- ii) Assume suitable data whether necessary.

Section A

- |     |   |    |
|-----|---|----|
| Q.1 | a) What are the possible benefits from FACTS technology?                      | 10 |
|     | b) With neat sketches explain the operation of STATCOM.                       | 10 |
| Q.2 | a) What are the advantages of TCSC & Explain the different mode of operation. | 10 |
|     | b) Explain HVDC Vs FACTS in details.  | 10 |
| Q.3 | Write short note on any four  | 20 |
|     | i) Shunt compensator  |    |
|     | ii) Role of SVC   |    |
|     | iii) Basic types of FACTS controller  |    |
|     | iv) Static VAR compensator  |    |
|     | v) Thyristor switched series capacitor.                                       |    |

Section 'B'

- |     |   |    |
|-----|---|----|
| Q.4 | a) Explain in details the phenomenon of sub-synchronous resonance (SSR).                  | 10 |
|     | b) What is the Role of NGH-SSR Damping scheme as a FACTS controller in transmission line. | 10 |
| Q.5 | a) Explain the basic principle and operation of UPFC with neat diagram.                   | 10 |
|     | b) Explain the objectives of voltage and phase angle regulators.                          | 10 |
| Q.6 | Write short note on any four.   | 20 |
|     | i) Hybrid phase angle regulators.   |    |
|     | ii) IPFC  |    |
|     | iii) Thyristor controlled braking resistor.   |    |
|     | iv) Switching convertor based voltage and phase.  |    |
|     | v) Multifunctional FACTS controller.  |    |