

Unit IV

7. (a) Explain Interline Power Flow Controller (IPFC). 7½
- (b) Discuss power quality problems in distribution system. 7½
8. Explain passive filters and active filters and their control. 15

No. of Printed Pages : 04

Roll No.

18AA1102

M.Tech. EXAMINATION, May 2019

(First Semester)

(C Scheme) (Re-appear)

EE(PS)

MPS503C

FACTS AND CUSTOM POWER DEVICES

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) What are the objectives of FACTS Technology ? How these objectives can be achieved ? Also explain various advantages of FACTS Technology. 7½
(b) Discuss in detail about Reactive Power Compensation (RPC) theory for transmission system. 7½
2. (a) Why shunt compensation is provided in the power system ? Explain. 7½
(b) How series compensation can be used to damp power oscillations ? 7½

Unit II

3. Describe the basic theory of series capacitor compensation line. Derive the transmitted power versus transmission angle formula for SSSC. Obtain the V-I Characteristics of SSSC. What are the merits of SSSC over TCSC ? 15

4. Compare STATCOM and SVC in terms of the following :
 - (a) Transient Stability
 - (b) Response Time
 - (c) Capability to exchange real power. 15

Unit III

5. Describe the basic operation principle of UPFC. Derive and draw the real power transmitting angle and reactive power vs. transmitting angle curve of a UPFC controller transmission line. 15
6. Write short notes on the following :
 - (a) Voltage swells
 - (b) Sags
 - (c) Flicker
 - (d) Unbalance. 15