

Code: **EEPC1T4**

**I M.Tech-I Semester-Regular/Supplementary Examinations  
January 2017**

**REACTIVE POWER COMPENSATION &  
MANAGEMENT  
(POWER SYSTEM CONTROL AND AUTOMATION)**

Duration: 3 hours

Max. Marks: 70

Answer any FIVE questions. All questions carry equal marks

1. Discuss phase balancing and power factor correction in an unsymmetrical load condition with an example. 14 M
2. a) What are the conventional reactive power compensation Techniques? 6 M  
  
b) Explain Dynamic voltage restorer and state its disadvantages 8 M
3. a) Differentiate static and dynamic reactive power compensation. 6 M  
  
b) Explain how shunt compensation is obtained by means of Mid-point shunt reactor or capacitor in transmission lines. 8 M

4. a) What are the parameters that define quality of power supply? 7 M
- b) What are the effects of under voltages in the power systems? 7 M
5. a) Discuss about various load shaping methods. 7 M
- b) Explain the power tariff norms and penalties in the power systems. 7 M
6. a) What are methods employed in loss reduction. 7 M
- b) Explain the economic planning of capacitor placement. 7 M
7. a) Why do the loads require reactive power? 7 M
- b) Briefly discuss reactive power management at load side by means of Capacitors. 7 M
8. Why do arc furnaces pose serious threat to power quality and discuss the remedial measures? 14 M