

8. (a) Explain the remedial measures for voltage flicker in detail (10)
- (b) Discuss the power factor of an arc furnace in detail. (10)
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Roll No.

23260

**M. Tech. 1st Sem. (Electrical
Power Systems)
Examination- December, 2016
REACTIVE POWER COMPENSATION &
MANAGEMENT**

Paper : MTEPS-104

Time : 3 hours

Max. Marks : 100

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

Note: Attempt any **five** questions.

1. Draw the reactive power characteristics and also explain with neat figures and circuit diagrams. (20)
2. (a) What is Surge Impedance Loading ? Also explain Natural loading in detail. (10)

- (b) Discuss the different types of compensation in detail. (10)
3. (a) Discuss the passive shunt compensation in detail ? (10)
- (b) Discuss briefly the subsequent Virtual-ZO (Surge impedance compensation) (10)
4. (a) What is Reactive power planning ? What are the transmission benefits when reactive power dispatching strategy is applied to improve power system operation ? (10)
- (b) Discuss how Reactive Power Management or Planning is found by means of mathematical modeling. (10)

5. (a) What are the different load patterns available ? Also explain the basic methods of load shaping. (10)
- (b) Discuss how shunt compensation is found by means of Mid-point shunt reactor or capacitor in transmission lines. (10)
6. (a) Give the objectives of Reactive power planning ? (10)
- (b) What are the different types of system losses ? Explain all in detail. (10)
7. What is the purpose of using capacitors on user side for reactive power management ? What are the deciding factors for the selection of capacitors ? Explain factors in detail. (20)