R09

Code No: C0705

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.TECH I SEMESTER EXAMINATIONS, APRIL/MAY-2012
REACTIVE POWER COMPENSATION AND MANAGEMENT
(ELECTRICAL POWER SYSTEMS)

Time: 3hours **Max. Marks: 60**

Answer any five questions
All questions carry equal marks
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1.a) Explain the objectives of load compensation.
b) Give the specifications of a load compensator.

2. Explain the method of phase balancing and power factor correction of unsymmetrical loads.

3.a) Explain the switched shunt reactor compensation for uncompensated transmission line.
b) Explain the thyristor switched capacitor (TSC) compensation for uncompensated transmission line.

4. Define reactive power management and explain the mathematical modeling of reactive power dispatching strategy.

5. Define flicker and explain its principles of compensation by SCVD and flicker meter method.

6.a) Explain the various System losses and the loss reduction methods used in Demand side management.
b) Explain the various load patterns and their basic methods of shaping.

7.a) Explain how Arc furnaces as an electric load and derive the 1-phase equivalent circuit for Estimating furnace operating characteristics.
b) Explain the power factor of an electric arc furnace.

8. Write short notes on
a) KVAR requirements for domestic appliances
b) Explain the advantages and disadvantages of different types of flicker compensators.
c) Reactive power control requirements for traction systems.

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