NR

Code No. A0706

JAWAHARLAL NEHRU TECHNOLOGY UNIVERSITY, HYDERABAD

M.Tech. I Semester Regular Examinations, March – 2009

REACTIVE POWER COMPENSATION AND MANAGEMENT

(Electrical Power Systems)

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

Answer any Five questions

All questions carry equal marks

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1. Derive relevant expressions to show the effect of compensator on power factor correction and voltage regulation and also demonstrate that the ideal reactive compensator cannot maintain both constant voltage and unity power factor at the same time.

2. Obtain the expressions for the distributed compensation effect on voltage control, reactive power and maximum power transfer.

3. Draw the voltage current characteristics of power system and static compensator and explain how the compensator can improve the dynamic performance of the system.

4. Give a detailed algorithm for optimum dispatch of reactive power with relevant expressions.

5. Explain different power tariffs and penalties for voltage flickers.

6. Give a detailed economic justification of reactive power planning.

7. Discuss the KVAR requirements of domestic appliances.

8. Give the layout of steel mill system and discuss the reactive power requirements of the same.

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