

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL

New Scheme Based On AICTE Flexible Curricula

Electrical & Electronics Engineering, VIII-Semester

Departmental Elective EX- 802 (A) Power quality Problems and mitigation techniques

UNIT-I Introduction, power quality -voltage quality, power quality evaluations procedures term and definition: general classes of power quality problem, causes & effect of power quality disturbances.

UNIT-II Loads that causes power quality problems, State of art on Passive shunt and series compensation, Classification and working of passive shunt and series compensation, Classification, Principle and control of active shunt compensator: DSTATCOM, Active series compensators, working and its control.

UNIT-III Introduction to unified power quality compensators, classification, working and operation of UPQC.

UNIT-IV Voltage sags and interruption: sources of sags and interruption, estimating voltages sag performance, fundamental principles of protection, monitoring sags. Transients over voltages: sources of transient over voltages, principles of over voltages protection, utility capacitor switching transients, fundamentals of harmonics and harmonics distortion, harmonics sources from commercial load and from industrial loads.

UNIT-V Applied harmonics : harmonics distortion evaluations, principles for controlling harmonics, harmonics studies devices for controlling harmonic distortion, Shunt active and passive filters, their operation and control.

Reference Books:

1. Power Quality- by R.C. Duggan
2. Power System harmonics –by A.J. Arrillga
3. Power electronic converter harmonics –by Derek A. Paice
4. Power quality problems and mitigation techniques: Bhim singh, Amrish Chandra, Kamal Al- Haddad.