

**Power Quality (Elective-III)****(Power System and Control Automation)****Date: 01-08-2025****Time: 3 Hours.****Max. Marks: 70****Answer ONE Question from each UNIT and each question carries 14 Marks****UNIT-1**

1. Explain the various types of power quality disturbances and impacts of power quality. [14 Marks;CO1;Understand]

**(OR)**

2. A) Explain Categories and Characteristics of Power System Electromagnetic Phenomena, which cause Power Quality Problems [7 Marks;CO1;Understand]  
B) Define power quality? Explain the reasons for increased concern in power quality. [7 Marks;CO1;Understand]

**UNIT-2**

3. A) What are the different sources of transient over voltages? Discuss the capacitor switching transients [7 Marks;CO2;Understand]  
B) Explain in detail the mechanism of lightning. [7 Marks;CO2;Understand]

**(OR)**

4. What are transient over voltages? Explain the different types of transient over voltages. [14 Marks;CO2;Understand]

**UNIT-3**

5. A) Explain the principles for regulating the voltage in power systems [7 Marks;CO3;Understand]  
B) Explain the application of Utility voltage regulator for regulating the voltage [7 Marks;CO3;Understand]

**(OR)**

6. What is meant by voltage flicker? List some sources of flicker. Discuss the methods for mitigation of flicker? [14 Marks;CO3;Understand]

**UNIT-4**

7. A) Explain the various sources of harmonics from commercial loads [9 Marks;CO4;Understand]  
B) Explain the impact of harmonic distortion on capacitors [5 Marks;CO4;Understand]

**(OR)**

8. Explain about fundamentals of harmonics generation and waveform distortion. [14 Marks;CO4;Understand]

**UNIT-5**

9. A) Explain Power quality monitoring and considerations in details [7 Marks;CO5;Understand]  
B) Discuss historical perspective of PQ measuring instruments [7 Marks;CO5;Understand]

**(OR)**

10. A) Explain different equipment used for measurement of power quality [7 Marks;CO5;Understand]  
B) How to assess the measuring data of Power quality [7 Marks;CO5;Understand]

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