PVP 20

Code: 20EE4701C

IV B.Tech - I Semester – Regular Examinations - DECEMBER 2023

POWER QUALITY

(ELECTRICAL & ELECTRONICS ENGINEERING)

Duration: 3 hours Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.
2. All parts of Question must be answered in one place.

BL – Blooms Level CO – Course Outcome

			BL	CO	Max. Marks
UNIT-I					
1	a)	Illustrate the basic steps involved in power quality evaluation procedure.	L3	CO2	7 M
	b)	Classify voltage variations in power systems.	L4	CO4	7 M
OR					
2	a)	Identify the causes of capacitor-switching transients.	L3	CO2	7 M
	b)	Explain about waveform distortion and Power frequency variations.	L4	CO4	7 M
UNIT-II					
3	a)	Make use of area of vulnerability in the procedure of estimating voltage sag performance.	L3	CO2	7 M
	b)	Explain the various causes and effects of voltage sags.	L4	CO4	7 M
OR					

4	a)	Identify the importance of equipment sensitivity to voltage sags.	L3	CO2	7 M
	b)	Explain the transmission system sag performance evaluation.	L4	CO4	7 M
		UNIT-III			
5	a)	Illustrate any two solutions at the end user level.	L3	CO3	7 M
	b)	Inspect the importance of Ferro resonant transformers with neat diagram for voltage sag improvement.	L4	CO4	7 M
		OR			
6	a)	Illustrate standby and hybrid UPS with neat diagram.	L3	CO3	7 M
	b)	Examine the importance of superconducting magnetic energy storage devices in voltage sag mitigation.	L4	CO4	7 M
		UNIT-IV			
7	a)	Illustrate the concept of voltage versus current distortion.	L3	CO2	7 M
	b)	Identify the causes of harmonics from commercial loads.	L3	CO3	7 M
		OR			
8	a)	Identify the causes of harmonics from Industrial loads.	L3	CO3	7 M
	b)	Explain any two devices for controlling Harmonic Distortion.	L4	CO4	7 M

UNIT-V					
9	a)	Discuss different types of Distributed generation technologies.	L3	CO2	7 M
	b)	Identify various DG interfaces to the Utility system.	L3	CO2	7 M
OR					
10	a)	Identify the important factors when choosing the power quality measuring instrument.	L3	CO2	7 M
	b)	Illustrate various objectives of power quality monitoring considerations.	L4	CO4	7 M