SIDDHARTH GROUP OF INSTITUTIONS :: PUTTUR
Siddharth Nagar, Narayanavanam Road – 517583
(Autonomous)

QUESTION BANK (DESCRIPTIVE)

Subject with Code : PQ (18EE2105) **Course & Branch**: M.Tech - EEE
Year & Sem: I & I-Sem **Regulation:** R18

UNIT –I
Introduction

1. What is power quality? Why we are concern about power quality? 10M
2. What is meant by *power quality*? What are the basic power quality measures? 10M
3. What is voltage swell? How it differs from over voltage? Explain any two reasons for voltage swell? 10M
4. Classify the different types of power quality issues. 10M
5. What is meant by international power quality standards? Where are they used? 10M
6. Explain IEEE standard corresponding to harmonics? 10M
7. Explain the various types of power quality disturbances and its causes? 10M
8. Explain power acceptability curves? 10M
9. Explain power quality standards? 10M
10. Write short notes about THD, TIF, DIN and C-message weights? 10M

UNIT –II

1.	What is harmonic distortion? Discuss about the voltage versus current distortion?	10M
2.	a) Write the impact of voltage distortion and current distortion?	5M
	b) Write short notes about triplex harmonics?	5M
3.	Explain the power system quantities under non sinusoidal condition?	10M
4.	What are the harmonics sources from commercial loads?	10M
5.	What are the total harmonic distortion and RMS value of a harmonic waveform?	10M
6.	Explain the brief description about the harmonic distortion evaluation.	10M
7.	Explain the principles of controlling harmonics?	10M
8.	Explain the various devices for the controlling of harmonics distortion?	10M
9.	What are effects of harmonics? Explain harmonic distortion evaluation procedure?	10M
10.	Explain the effect of power system harmonics on power system equipment and load?	10M

UNIT –III

1.	Explain the modeling of power system under non-sinusoidal conditions?	10M
2.	How harmonics are produced and what are the harmonic introducing devices?	10M
3.	Explain IHD, TDD, true rms, displacement power factor and distortion power?	10M
4.	With a block diagram explain hybrid UPS. Compare it with online and offline UPS?	10M
5.	Explain the impact of harmonic distortion on motors and transformers?	10M
6.	Explain the power quality problems created by drives and its impact on drive?	10M
7.	Explain in detail the role of capacitors for the voltage regulation.	10M
8.	Explain the effect of line drop compensation on the voltage profile.	10M
9.	What are the conventional devices available for the voltage regulation?	10M
10.	Explain ground systems loads that cause power quality problems?	10M

UNIT –IV

1.	Explain passive compensation and passive filtering techniques?	10M
2.	Write short notes about impedance scan analysis?	10M
3.	Explain 3-phase APFC and its control techniques?	10M
4.	Explain 1-phase APFC and its control techniques?	10M
5.	What is the main source of causing resonance in power system?	10M
6.	Explain typical grounding and wiring problem with solutions?	10M
7.	Explain control Methods for Single Phase APFC?	10M
8.	Explain about Harmonic Resonance Impedance Scan ?	10M
9.	Explain about the PFC Based on Bilateral Single Phase?	10M
10.	Explain about the PFC Based on Bilateral three Phase Converter?	10M

UNIT –V

1.	Define SVC? What is the important role of SVC?	10M
2.	Explain in detail Dynamic Voltage Restorer for sag, swell and flicker problems?	10M
3.	Define Dynamic voltage restorer? What is the important role of DVR harmonic elimination?	10M
4.	What are the typical wiring and grounding problems? What are the solutions applied for wiring and grounding problems?	10M
5.	Explain in detail about principles of operation and control methods of shunt active filter with neat schematic?	10M
6.	Explain briefly about for the following harmonic filter. (i)Active filters (ii)Passive filters	10M
7.	Explain how power factor can be improved using STATCOM?	10M
8	Explain DVR for sag, swell and flicker problems?	10M
9.	Explain d-q domain control for harmonic filtering using shunt active filter?	10M
10.	Explain d-q domain control for harmonic filtering using shunt active filter?	10M

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