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B.TECH.

THEORY EXAMINATION (SEM–VIII) 2016-17

POWER QUALITY

Time : 3 Hours ***Max. Marks : 100***

Note : *Be precise in your answer. In case of numerical problem assume data wherever not provided.*

SECTION – A

1. Explain the following: **10 x 2 = 20**

(a) What is the meaning of the term "Power Quality".

(b) Define the term "Voltage Swell ".

(c) What are the Sources of Electrical Transients in Power System

(d) Define the terms Notching and Harmonics

(e) What is Flicker meter?

(f) What could be the impact of "Poor Power Quality" on systems efficiency, reliability and operation?

(g) What is 'CUSTOM POWER'?

(h) Define any two types of devices used for over voltage protection.

(i) What are the causes of voltage and current harmonics?

(j) Explain how power quality issue 'Voltage regulation' affected by distributed Generation.

SECTION – B

2. Attempt any five of the following questions: **5 x 10 = 50**

(a) Discuss the working of Active Series compensator.

(b) Discuss the different types of Waveform distortion

(c) What is the Meaning of "Voltage Sag"? What are the causes of the Voltage Sag in a power System?

(d) What are the different types of Electrical Transients occur in a Power System?

(e) Discuss the Effect of Harmonics on the Transformers and AC motors in details

(f) Discuss the Harmonics Mitigation Techniques in Detail.

(g) Explain the different types of Network reconfiguration devices with a circuit diagram.

(h) What are the equipments needed to minimize the voltage disturbance? Identify the location of these.

SECTION – C

Attempt any two of the following questions: **2 x 15 = 30**

3. What are the Causes of Voltage and Current Harmonics? Discuss the Harmonics Measurement Techniques.

4. With suitable block diagram, explain the working difference between "On-line UPS" and "Off-line UPS".

5. Discuss the load compensation and Voltage Regulation using DSTATCOM.

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