

Printed Pages—3

EEE061

(Following Paper ID and Roll No. to be filled in your Answer Book)

<b>PAPER ID : 2902</b>	<b>Roll No.</b>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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**B.Tech.**

(SEM. VIII) THEORY EXAMINATION 2011-12

**POWER QUALITY***Time : 3 Hours**Total Marks : 100***Note :—Attempt all questions.**1. Attempt any **two** of the following :— **(10×2=20)**

(a) Define the following terminologies :

(i) Voltage sag,

(ii) Waveform distortion

(b) What causes voltage imbalance in a system ? What are its consequences ? How is it different from voltage fluctuation ?

(c) What are the causes of interruptions ? How do short duration interruptions differ from sustained interruptions ? What is the importance of interruptions ?

2. Attempt any **two** of the following :— **(10×2=20)**

(a) What are the various reasons of voltage sag in a system ? Describe one of them in detail.

- (b) What are the adverse effects of voltage sag ? How can this be prevented ?
- (c) Differentiate between the Static UPS and the Rotary UPS.

3. Attempt any **two** of the following : **(10×2=20)**

- (a) Discuss briefly about the switching transients caused by motor starting. What can be done to prevent the same ?
- (b) What is the significance of neutral voltage ? Under which conditions it suffers swings ? What can be done to prevent the same ?
- (c) Discuss about the overvoltage protection of power system against lightening.

4. Attempt any **two** of the following :— **(10×2=20)**

- (a) How do the harmonics get injected into the power system ? What are the current and voltage harmonics ?
- (b) What adverse effect of harmonics is seen in Transformers and in AC motors ?
- (c) How does the performance of communication line get affected due to harmonics in power system ? How are the harmonics mitigated ?

5. Attempt any **two** of the following :— (10×2=20)

- (a) Enumerate the devices used to check the voltage related power quality in power system. Discuss any one of them in detail.
- (b) Why is grounding necessary in Power system ? What is the technique used to test adequacy of wiring and grounding ?
- (c) Write a detailed note on Unified Power Quality Conditions.