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Total Number of Pages : 1

M.TECH

M.TECH 2<sup>ND</sup> SEMESTER (AR 17) SUPPLEMENTARY EXAMINATIONS, APRIL/MAY 2019

POWER QUALITY MANAGEMENT

Branch: PE, Subject Code:MPEPE2051

Time: 3 Hours

Max Marks : 70

PART-A

(10 X 2=20 MARKS)

1. Answer the following questions.

- What are the various methods to improve voltage sags in utility system
- Define Fuse. Write two basic kinds of fuses?
- What is the reason for existence of harmonic distortion?
- Define point of common coupling.
- Mention the Instruments used for the analysis of non-sinusoidal voltage and currents?
- Give any two analysis examples available in PSCAD/EMTP?
- What are various types of interruption? Also write down two causes of interruption?
- What is total harmonic distortion?
- Generalize the need of low pass filter?
- Describe basic concept of Unified Power Quality Conditioners

PART-B

(5 X 10=50 MARKS)

Answer any five questions from the following.

- What is voltage swell? What are the causes of voltage swell and interruption [5]
  - What are the methods to be adopted for motor starting to reduce voltage sags during starting [5]
- Explain the underground cable system protection. [5]
  - Illustrate the phenomena of impulsive transients and oscillatory transients. [5]
- Write short notes on Active power filter. [5]
  - What is interruption? How it is different from outage and failure? Give a suitable example. [5]
- Explain active series compensator to compensate the voltage sag occurs in power system [5]
  - Explain Distortion factor (DF) and total harmonic distortion (THD) of a voltage waveform. Write the relationship between THD, DF and power factor. [5]
- What is the need of IEEE standards used in harmonics studies? Give their philosophy and objectives of these standards. [5]
  - Define waveform distortion and explain the waveform distortion categories. [5]
- Analyze the role of expert systems in power quality monitoring [5]
  - Bring out the important characteristics of power quality variations. [5]
- Write short notes on
  - Causes of Harmonics. [5]
  - DSTATCOM [5]