

M. Tech.-III (Electrical -Power System) (CBCS – 2015 Course) :
WINTER - 2018

SUBJECT: POWER QUALITY ISSUES

Day: Tuesday
Date: 04/12/2018

W-2018-3280

Time: 11.00 AM TO 02.00 PM
Max. Marks: 60

N.B:

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Answer the both sections should be written **SEPARATE** answer sheets.
 - 4) Assume stable data if necessary.
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SECTION-I

- Q.1** As per IEEE standard 1159 explain the following terms in detail (10)
i) Impulsive transient ii) Oscillatory transient

OR

- Q.1** Describe the various steps taken to reduce the number and severity of voltage sags and to reduce the sensitivity of equipment to voltage sags. (10)

- Q.2** How Magnification of capacitor-switching transients takes place on power system? (10)

OR

- Q.2** How the Ferro resonance effect is managed in utility system to avoid transient over voltages. (10)

- Q.3** What do you mean by inter harmonics? What are the causes of generation of these harmonics? What are the methods of mitigating inter harmonics? (10)

OR

- Q.3** What are the most commonly used indices for measuring the harmonic content of a waveform? (10)

SECTION-II

- Q.4** Explain in detail harmonic generation in Rotating Machines and Distortion Caused by Arcing Derives. (10)

OR

- Q.4** Explain the effects of Harmonics on Consumer Equipment and Interference with Communications. (10)

- Q.5** Compare Active and Passive Filters for controlling the harmonics with its application and block diagram. (10)

OR

- Q.5** Explain how modeling is used for harmonic Computation as well as for its, Assessment. (10)

- Q.6** Explain complete case study for power quality monitoring, Assessment and Mitigation. (10)

OR

- Q.6** Discuss in brief harmonic test systems and Mitigation techniques used at different environments. (10)