

**M. TECH.-III (ELECTRICAL -POWER SYSTEM) (CBCS – 2015
COURSE) : SUMMER - 2018
SUBJECT: POWER QUALITY ISSUES**

Day: **Tuesday**
Date: **29/05/2018**

S-2018-3142

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 to both the sections should be written in **SEPARATE** answer book.
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SECTION-I

Q.1 Define with suitable example sag, swell and interruptions occurring in electrical systems. (10)

OR

Explain the importance of power quality and how to maintain it within the prescribed limits. (10)

Q.2 Compare devices used for over voltage protections in detail. (10)

OR

What do you mean by switching transients? Explain the problems associated with it. (10)

Q.3 Elaborate Fast Fourier Transform (FFT) used for analysis of harmonics and also state how to estimate the efficiency of FFT algorithms. (10)

OR

Explain the factors influencing the Development of standards for governing the limits of harmonics. (10)

SECTION-II

Q.4 Explain the effect of harmonics on rotating machines? (10)

OR

Explain in detail how power system protection devices get affected by harmonics? Also give appropriate example. (10)

Q.5 Derive the series P.U. length harmonics impedance for underground and submarine cables. (10)

OR

Compare various methods of Interactive Harmonic analysis (IHA) ? (10)

Q.6 Describe different indices used in power quality assessment in detail. (10)

OR

Define and explain the term-observability analysis. (10)

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