

**B. TECH. (CBCS - 2014 COURSE) SEM –VIII (ELECTRICAL  
ENGG.) : SUMMER - 2018**

**SUBJECT: ELECTRICAL POWER QUALITY**

Day : **Saturday** Time : **02.30 PM TO 05.30 PM**  
Date : **02/06/2018** S-2018-4672 Max Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to right indicate **FULL** marks.
- 3) Draw neat and labeled diagram **WHEREVER** necessary.
- 4) Assume suitable data, if necessary.

**Q.1** Explain briefly the characterization of Power Quality issues. Also define the various terms related to Power Quality. **(10)**

**OR**

**Q.1** Explain the Power Quality evaluation procedure in detail. Also mention the importance of Power Quality. **(10)**

- Q.2** a) What are the sources of Voltage Sag? Explain in detail. **(05)**  
b) What is the impact of Voltage Sag on the Power system and Power system equipments? **(05)**

**OR**

**Q.2** What are the possible alternatives for protections of sensitive loads to Voltage Sag? Explain fast transfer switches in detail. **(10)**

**Q.3** What is the principle of Overvoltage protection? Explain the various sources of Over Voltage protection in detail. **(10)**

**OR**

- Q.3** a) Explain how Capacitor switching is related to the concept of Overvoltage? **(05)**  
b) How do Computer analysis tools find their applications in transient analysis? Name some Computer analysis tools for transient analysis. **(05)**

- Q.4** a) Compare Active and Passive filters for Harmonic analysis. **(05)**  
b) State different standards governing Harmonic limits and its applications. **(05)**

**OR**

- Q.4** a) State and explain any two Power Quality issues in detail. **(05)**  
b) What is PCC? Explain its significance with respect to Harmonic measurement. **(05)**

- Q.5** a) What are the parameters to be monitored for identifying the Power Quality problem? **(05)**  
b) State and explain the sources of Flicker. **(05)**

**OR**

- Q.5** a) What is the purpose of Power Quality monitoring system? **(05)**  
b) What is Spectrum analyzer? Explain with a suitable example. **(05)**

- Q.6** a) State the various Power Quality parameters? Explain any two. **(05)**  
b) Explain the role of Power Quality measurement in case of DG? **(05)**

**OR**

- Q.6** a) State and explain the important specifications of Power Quality analyzer. **(05)**  
b) Explain the need of Power Quality measurement and justify its test locations. **(05)**