Seventh Semester B.Tech. Degree Examination, October 2018
(2013 Scheme)
13.706.4 : POWER QUALITY (E) (Elective – III)

Time : 3 Hours
Max. Marks : 100

PART – A

Answer all questions. Each question carries 2 marks.

1. List the major electric power quality issues.
2. Define Sag.
3. What is transient over voltage?
4. What are the mitigation techniques for voltage sag?
5. List the sources for over voltages.
6. Why even harmonics are normally absent in power converters?
7. What is the difference between harmonics and transients?
8. What are the benefits of power quality monitoring?
9. What do you mean by IEC?
10. List some of the major power quality monitoring equipment. (10×2=20 Marks)

PART – B

Answer one full question from each Module. Each question carries 20 marks.

Module – I

11. a) What are the major power quality issues? Explain in detail. 10
    b) Define power quality. Explain the reasons for increased concern in power quality. 10

    OR

12. Discuss about the monitoring and mitigation of voltage sag. 20

P.T.O.
Module - II

13. Discuss the sources of over voltage due to the following phenomena.
   i) Capacitor switching
   ii) Lightning.

    OR

14. a) Discuss the fundamental principles of overvoltage protection of load equipment.  
     b) Discuss the voltage swell issue with examples.

Module - III

15. a) Explain briefly how the phenomena of current distortion affects the voltage distortion under the presence of harmonics.  
     b) Explain briefly about various harmonic characterization in power system.

    OR

16. Discuss in detail about the harmonics in disturbed generation and how to rectify it.

Module - IV

17. Draw the block diagram of power quality monitoring system. Explain in detail.

    OR

18. Explain the features of spectrum analyzer and flicker meter.