Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

EX-8002 (CBGS)

B.E. VIII Semester

Examination, May 2019

Choice Based Grading System (CBGS)

Power Quality Problems And Mitigation Techniques

Time : Three Hours

Maximum Marks : 70

Note: i) Solve any five questions.

ii) All questions carry equal marks.

1. a) Explain in detail how the reduction in no of faults in a power system network will improve the power quality. 7
   b) Name the four mitigation methods used in power system network to improve the power quality. 7

2. What are series and shunt compensators? Compare their role for power quality improvement. 14

3. Write short notes on any two: 14
   a) Unified power quality conditioner UPQC
   b) Voltage and phase angle imbalance
   c) Harmonic reduction and standards

4. What are active and passive power filters. Distinguish between voltage flicker and voltage fluctuations. What are the main reasons of these problems. 14

5. a) Differentiate between long interruption and short interruption of the power system networks. 7
   b) Explain the mitigation of voltage sag in case of AC drive and adjustable DC drives. 7

6. Distinguish between voltage sag and under voltages. Briefly discuss the techniques used for sag or dip reduction. Distinguish between voltage swell and over voltages. 14

7. Discuss the principle of phase angle compensation. What is a phase shifter? Discuss the measures adopted to minimize the frequency and duration of outages in distribution systems. 14

8. a) Explain various sources of transient over voltage. Define impulsive transients. Give example for impulsive transient over voltages. http://www.rgpvonline.com 7
   b) Define Harmonic distortion observed in power system. Also name two key sources that produce harmonic distortion and justify your answer. 7

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