

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 08

M.Tech.(Power System) (2013 & Onwards) (Sem.-1)**POWER SYSTEM QUALITY ASSESSMENT****Subject Code : MTPS-103****M.Code : 70732****Time : 3 Hrs.****Max. Marks : 100****INSTRUCTION TO CANDIDATES :**

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

1. a) What are the major power quality issues? Explain in detail. 10
b) Define power quality. Explain the various types of power quality disturbances and impacts of power quality. 10
2. a) Explain the following terms related to Power quality : 10
 - i. Voltage imbalance
 - ii. Under voltage
 - iii. Over voltage
 - iv. Frequency variationb) Define waveform distortion. Explain electromagnetic compatibility in detail. 10
3. How does voltage sag affect different equipments in industries, protective switchgears and consumer electronics? Explain using various waveforms. 20
4. a) Explain the assessment of voltage and current unbalance in power system. 10
b) What are the various instruments used for power quality measurements? What are the factors to be considered while selecting the instruments? 10
5. a) What is fundamental frequency characterization? Explain window functions. 15
b) What are the different effects of harmonics on power system devices? 5

6. a) Write a short note on the following.
- i. Event recording 5
 - ii. Flicker monitoring 5
 - iii. Assessment of voltage unbalance 5
- b) What are the instruments used for analyzing non sinusoidal voltage and currents. 5
7. a) Explain the following :
- i. Harmonic sources from commercial loads. 5
 - ii. Harmonic sources from industrial loads. 5
 - iii. Harmonic sources from residential loads. 5
- b) What are the various waveform distortion categories? 5
8. a) Explain the essentials of a grounded system. 10
- b) Explain the difference between single point and multipoint grounding. 10

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.