

Roll No. 

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

Total No. of Pages : 02

Total No. of Questions : 08

**M.Tech. (Electrical Power System) (2018 Batch) (Sem.-2)****POWER QUALITY****Subject Code : EEPS-204C-18****M.Code : 76091****Time : 3 Hrs.****Max. Marks : 60****INSTRUCTIONS TO CANDIDATES :****1. Attempt any FIVE questions out of EIGHT questions.****2. Each question carries TWELVE marks.**

1.
  - a) What are the major power quality issues? Explain the reasons for increased concern in power quality. 6
  - b) Explain the various IEEE and IEC standards used for harmonic mitigation. 6
2.
  - a) How the load current harmonics are responsible for source voltage distortion? Also explain the various harmonic indices. 6
  - b) What are the important objectives of power quality monitoring? Describe different methods of power quality monitoring. 6
3.
  - a) Explain in detail about principle of operation of a shunt active power filter with neat schematic diagram. 8
  - b) What is fundamental frequency characterization? Explain window functions. 4
4.
  - a) How does voltage sag affect different equipments in industries, protective switchgears and consumer electronics? Explain using various waveforms. 8
  - b) What are the various waveform distortion categories? 4
5.
  - a) Write a short note on the following : 8
    - i) Event recording
    - ii) Flicker monitoring
    - iii) Assessment of voltage unbalance
  - b) What are the instruments used for analysing non sinusoidal voltage and currents? 4





6. a) Using a block diagram, describe the principle of operation of a dynamic voltage restorer. 8
- b) Explain the essentials of a grounded system. 4
7. What are Custom power devices? Explain the operation of **any two** custom power devices in detail. 12
8. a) Discuss the operation of a CVT. Why and where it is preferred? 6
- b) Explain the operation of **any one** device which is mainly responsible of flicker problem in power system. 6

**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.**

