

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.