

Roll No.

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**M.Tech. (Electrical Engg.) (Power Systems & Renewable Energy)
(Sem.-2)**

POWER QUALITY AND HARMONIC ANALYSIS

Subject Code : PSRE-203A/21

M.Code : 91871

Date of Examination : 08-07-22

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. What do you understand by power quality issues? Discuss the important factors responsible for poor power quality in power system.
2. a) How flickers and interruptions disturb the magnitude of power quality?
b) How voltage sags are associated with system faults?
3. a) Discuss the transients occur while switching on utility side capacitor.
b) Briefly discuss the devices used for overvoltage protection.
4. Discuss in detail the strategies for utilities, used to decrease the impact of lightning.
5. How the following harmonic sources from industrial loads affect the quality of power?
a) Three phase power converters
b) AC Drives
c) DC Drives.
6. Enlist the type of harmonics which are responsible for waveform distortion? Describe the harmonic indices: THD, TIF and DIN.
7. Discuss the strategies or methods used for locating harmonics and why it is significant to locate harmonics?
8. Discuss the three primarily variables affecting the system response characteristics.

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