

Code: EE8T2B

**IV B.Tech - II Semester –Regular / Supplementary Examinations
July - 2021**

**POWER QUALITY
(ELECTRICAL AND ELECTRONICS ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

PART – A

Answer *all* the questions. All questions carry equal marks
11x 2 = 22 M

1.

- a) Define power quality.
- b) What is voltage sag?
- c) Name the different motor starting methods.
- d) What is the cause of voltage sag due to single line to line fault?
- e) Define harmonic distortion.
- f) Define Total Demand Distortion.
- g) What do you mean by Distributed generation?
- h) What is flicker meter?
- i) What is the purpose of grounding?
- j) Name the harmonic indices.
- k) What is the difference between harmonics and transients?

PART – B

Answer any **THREE** questions. All questions carry equal marks. 3 x 16 = 48 M

2. a) Explain the sources of sags in power system. 8 M
- b) Discuss about long and short duration voltage variations. 8 M
3. a) What are the different voltage sag mitigation techniques? Explain the principle of operation of DVR used for sag mitigation. 8 M
- b) Evaluate the economics of different ride-through alternatives. 8 M
4. Discuss the characteristics of harmonics generated by different types of industrial load and commercial load. 16 M
5. a) Explain about the equipment used by distributed generators to remove harmonics? 8 M
- b) Explain different types of DG technologies. 8 M
6. a) Discuss the various solutions to wiring and grounding problems. 8 M
- b) Draw neat sketch and represent basic elements of a properly grounded electrical system. 8 M