

MODEL QUESTION PAPER
VII SEMESTER B. TECH DEGREE EXAMINATION
ELECTRICAL & ELECTRONICS ENGINEERING
13.706.4 Power Quality (E)

Time : 3 Hours

Maximum Marks : 100

Answer **ALL** Questions in **Part A** and **ONE FULL** Question **EACH** from each **Module** in **Part B**

Part A

Questions carry 2 marks each

1. What are the issues faced by power systems, which can be termed as power quality problems?
2. Voltage sag and interruption are very similar in nature. Justify the statement.
3. What are the major causes for power supply interruptions ?
4. Give two examples for overvoltage due to internal and external causes.
5. What are the contributions of UPS for lower quality in power supply?
6. How do you evaluate the power quality problem due to harmonics?
7. What are the quantities monitored by a power quality analyzer?
8. How are distributed generators sources for PQ issues?
9. Mention two standards specified by IEEE and IEC, for PQ.
10. What are the varieties of over voltages?

(10 × 2 = 20)

Part B

Module I

- 11. a) Define Voltage sag. b) How do you classify the voltage sag? c) What are the usual causes for producing voltage sag? (2 + 8 +10)
- 12. How do voltage sag affect different equipments in industries, protective switchgears and consumer electronics (20)

Module II

- 13. Using appropriate examples demonstrate the effect of five reliability indices. (20)
- 14. Explain the phenomenon that happens in a transmission line, after a lightning strike. (20)

Module III

- 15. Describe what are the few equipments, which contribute to harmonics in the utility. Explain how and why do this happen. (20)
- 16. What are the equipments used by distributed generators to remove harmonics? (20)

Module IV

- 17. Explain the features of a Power line disturbance analyzer and Power Quality Analyzer. (20)
- 18. Based on IEEE standards, how can you do an energy audit for power quality assessment and mitigation. (20)

