

[Total No. of Questions - 9] [Total No. of Printed Pages - 2]

Dec-24-0511 (CBCS)

EE-702 (Electrical Power Quality)

B.Tech-7th (CBCS)

Time : 3 Hours

Max. Marks : 60

*The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.*

**Note:** Attempt five questions in all, select one question each from section A, B, C, D. Section E (Question-9) is compulsory.

### SECTION A

1. (a) What is power quality? Why are we concerned about power quality? (5)
- (b) Write a short note on voltage imbalance. (5)
2. (a) Classify the different types of power quality issues. (5)
- (b) What are the types of wave form distortion? (5)

### SECTION B

3. Explain SVC (Static Var Compensator) with block diagram and also write its application. (10)
4. (a) Write short note on power factor improvement and discuss its methods also. (5)
- (b) Explain voltage rise due to capacitance phenomenon and also state its application. (5)

### SECTION C

5. Explain about various power quality measuring equipment. (10)

6. (a) Write a short note on power quality monitoring guidelines. (5)
- (b) Explain about the power quality bench marking. (5)

### SECTION D

7. (a) Explain power system grounding with phasor diagram and also its types. (5)
- (b) What are the essentials of a grounded system? (5)
8. (a) Explain signal reference ground and methods in detail. (5)
- (b) Explain difference in ground loops and ground electrode. (5)

### SECTION E (Compulsory)

9. a) Explain all the essentials of a grounded system.
- b) Explain Voltage sag and flicker in detail.
- c) Differentiate between grounding and earthing.
- d) Give the name of power quality measurement devices.
- e) Give guidelines for power quality measurement. (5×4=20)