Regulation 17 *Subject code: 1E8BD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech IV Year II Semester Supplementary Examinations, June 2022

POWER QUALITY

(EEE)

Maximum Marks: 70 Date:18.06.2022 Duration: 3 hours

Note: 1.This question paper contains two parts A and B.
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10x2M=20 Marks)

1 Why are these transients or noise on the power line causing problems now?
2 What are the power quality issues?
3 Define Dynamic Voltage Restorer (DVR).
4 What are the various factors affecting the sag magnitude due to faults at a certain point in the system?
5 What is mean by fault clearing time?
6 What are the causes of Voltage sags in short duration reductions in RMS voltage?
7 Write the different mitigation methods of DC drives?
8 Write short notes on Unbalanced sags?
9 What are the Types of power quality measurement equipment?
10 What is the importance of power quality monitoring?

Part-B

Answer All the following questions. (10M X 5=50Marks)

11 a) Explain various terms that are used in Power Quality. [5]
b) Describe the causes of short interruption. [5]

OR

12 What is the impact of transient on power quality? Classify the transients that occur in power systems. [10]

13 a) Discuss the limits of interruption frequency. [5]
b) Explain the differences between medium and low voltage systems. [5]

OR

14 Explain the voltage and current profiles during fault period and post fault periods. [10]

15 a) Explain about voltage sags in three phase circuits. [5]
b) Write the Theoretical Calculations of Voltage magnitude. [5]

OR

16 Draw and explain the magnitude –duration plots for voltage sag? [10]

17 a) Explain the analysis of sag magnitude in non-radial systems with local generator, sub-transmission loops. [5]
b) Overview of mitigation methods of DC drives? [5]

OR

18 What is voltage and explain the equipment behaviour in power electronic loads when the voltage sag present in the system? [10]

19 a) Explain the fault clearing time to changing the power system? [5]
b) What is the procedure to improve the equipment immunity? [5]

OR

20 What are the considerations to be taken for monitoring the PQ problem? [10]