R20 Regulation *Subject code: 3O5GA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, July 2024

SMART GRID TECHNOLOGIES

(CSE(AI&ML)))

Maximum Marks: 70 Date:01.08.2024 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	CO	Bloom Tx
All the following questions carry equal marks (10X2M=20 Marks)			
1	State the importance of smart grid.	CO1	L2
2	What is meant by "Real Time Pricing"?	CO1	L1
3	How does SMES store energy?	CO2	L2
4	Give the use of WAMS.	CO2	L1
5	List the characteristics of a microgrid.	CO2	L2
6	Identify one application of fuel cells.	CO3	L2
7	What is a Voltage source converter?	CO3	L1
8	What is EMC in smart grid?	CO4	L1
9	List the benefits of Home Area Network.	CO4	L2
10	Mention the requirements for a private Wireless WAN.	CO4	L2
	Part-B		
Answer All the following questions. (5X10M=50Marks)			Bloom Tx level
11	Illustrate the Advances in Energy Management Systems for the Smart Grid. [10]	CO1	L3
	OR		
12	Explain the Plug in Hybrid Electric Vehicles (PHEV). [10]	CO1	L2
13	What is Phasor Measurement Unit (PMU)? Explain the same. [10]	CO2	L3
	OR		
14	Discuss the IED application for monitoring & explain the protection also. [10]	CO2	L3
15	Explain concept of micro grid, and its need and applications. [10]	CO2	L2
	OR		
16	Describe the variable speed wind generators. [10]	CO2	L3
17	Evaluate the Power Quality Conditioners for Smart Grid. [10]	CO	L4
	OR		

18	Explain the Power Quality Audit in smart grid and also discuss Web based Power Quality monitoring. [10]	CO3	L3
19	Illustrate the Broadband over Power line (BPL) for smart grid. [10]	CO4	L3
	OR		
20	A. Explain the concept WAN related to smart grid. [5] B. Write a note on Wi-Max based communication in smart grid. [5]	CO4	L2