R20 Regulation *Subject code: 3O5GA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, April 2026

SMART GRID TECHNOLOGIES

(CSM)

Maximum Marks: 70 Date: 27.04.2026 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)	Marks	CO	BTL
1	Define Smart Grid.	2M	1	L1
2	Give four examples of smart appliances.	2M	1	L1
3	Define Geographic Information Systems (GIS).	2M	2	L1
4	Give four applications of IED's.	2M	2	L1
5	Difference between fuel-cells and Solar cells in two points.	2M	3	L1
6	Define Power Quality Audit.	2M	3	L1
7	Give four Power Quality issues of Grid.	2M	4	L1
8	Define EMC.	2M	4	L1
9	Expand HAN and NAN.	2M	5	L1
10	What are the basics of CLOUD Computing?	2M	5	L1

Part-B

	Answer All the following questions. (5X10M=50Marks)	Marks	CO	BTL
11	What is the Need of Smart Grid in present generation? Explain.	10M	1	L2
	OR			
12	Explain about the Plug in Hybrid Electric Vehicles (PHEV).	10M	1	L2
13	Explain the Concept Intelligent Electronic Devices & its application.	10M	2	L2
	OR			
14	Explain about the Wide Area Measurement System (WAMS).	10M	2	L2
15	Explain the micro-grid with neat diagram.	10M	3	L2
	OR			
16	Explain about Variable speed wind generators.	10M	3	L2
17	Explain the Power Quality issues of Grid connected Renewable Energy Sources?	10M	4	L2
	OR			
18	Discuss in detail about Power Quality Audit.	10M	4	L2
19	Explain the Wide Area Network (WAN) and ZigBee.	10M	5	L2
	OR			
20	Explain Broadband over Power line (BPL).	10M	5	L2

(MP3