R20 Regulation *Subject code:3O8CB*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VIII Semester Supplementary Examinations, May 2026

RENEWABLE ENERGY SOURCES

(ME)

Maximum Marks: 70 Date:06.05.2026 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 Electrical Grid.	2M	1	L1
2	Define Distributed Generation.	2M	1	L1
3	List general classification of wind Turbines?	2M	2	L1
4	Write the proton exchange membrane of Fuel cells.	2M	2	L1
5	Explain the stand alone operation of Induction generator.	2M	3	L1
6	Write about Power losses in Induction generator.	2M	3	L1
7	Write the operation of Fly wheel energy storage method.	2M	4	L1
8	What are the Energy storage parameters?	2M	4	L1
9	Define Ultra Capacitors.	2M	5	L1
10	Write about energy storage as an economic source.	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Explain about Renewable source of energy with examples.	10M	1	L2
	OR			
12	Analyse the speed control of wind power energy in small power generating systems.	10M	1	L2
13	Explain the operation and characteristics of PV cell with neat diagram.	10M	2	L2
	OR			
14	Explain the constructional features of the Proton Exchange membrane Fuel cell.	10M	2	L2
15	Explain the stead state operation losses of self excited Induction motor.	10M	3	L2
	OR			
16	Draw and explain the Magnetization curves of the Induction motor.	10M	3	L2
17	Explain different types of energy storage methods	10M	4	L2
	OR			
18	Write short note on Energy storage parameters? Explain the working of Lead Acid battery.	10M	4	L2

19	Explain the Instantaneous Active and reactive power control approach in the Integration of Renewable Energy sources.	10M	5	L2
	OR			
20	Explain the principles of Power Injection? What is Islanding of Power.	10M	5	L2