



R20 Regulation

Subject code:308CB

# TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VIII Semester Supplementary Examinations, November 2025

## RENEWABLE ENERGY SOURCES

(ME)

Maximum Marks: 70

Date:27.11.2025

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	What is Electrical Grid?	2M	1	L1
2	What is Distributed Generation?	2M	1	L1
3	Explain general classification of wind Turbines?	2M	2	L1
4	Explain the proton exchange membrane of Fuel cells?	2M	2	L1
5	Explain the stand alone operation of Induction generator?	2M	3	L1
6	Write short note on Power losses in Induction generator?	2M	3	L1
7	Explain the operation of Fly wheel energy storage method?	2M	4	L1
8	Write short note on Energy storage parameters	2M	4	L1
9	Write short note on Ultra Capacitors?	2M	5	L1
10	Explain about energy storage as an economic source?	2M	5	L1

### Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Write short note on Renewable source of energy?	10M	1	L2
	OR			
12	Analyse the speed control of wind power energy in small power generating systems.	10M	1	L2
13	Draw the equivalent circuit of PV cell and explain its characteristics.	10M	2	L2
	OR			
14	Explain the constructional features of the Proton Exchange membrane Fuel cell?	10M	2	L2
15	Explain influence of parameters while selection of plant site.	10M	3	L2
	OR			
16	Explain Wind energy conversation process with neat sketch.	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