R22 Regulation *Subject code: 4O8AB*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VIII Semester Regular Examinations, May 2026

RENEWABLE ENERGY SOURCES

(CE)

Maximum Marks: 60 Date:12.05.2026 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 10 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 (10X1M=10 Marks)		Marks	CO	BTL
1.a)	What is demand-side management?	1	1	1
b)	Define wind intensity.	1	1	1
c)	What is meant by PV panel?	1	2	1
d)	State one application of solar energy.	1	2	1
e)	What is speed control?	1	3	1
f)	What are losses in induction generators?	1	3	1
g)	What is pumped hydro storage?	1	3	1
h)	Define compressed air energy storage.	1	4	1
i)	What are interconnection standards?	1	4	1
j)	Define control system.	1	4	1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
2	Discuss in detail about the types and working of wind turbines.	10	1	2
	OR			
3	Explain the factors affecting site selection for wind power plants.	10	1	2
4	Describe construction and working of fuel cells in detail.	10	2	3
	OR			
5	Explain advantages and disadvantages of fuel cells.	10	3	2
6	Explain the principle of operation of induction generator with neat sketch.	10	3	2
	OR			
7	Discuss self-excited induction generator with diagram.	10	3	2
8	Discuss the working phenomena of lead-acid batteries.	10	3	2
	OR			
9	Explain ultra-capacitors and their applications.	10	4	2
10	Explain the integration of renewable energy sources to grid.	10	4	2
	OR			
11	Explain islanding and interconnection control in detail.	10	4	2