R18 Regulation *Subject code:2E8CA*

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	Define altitude angle, zenith angle and Azimuth angle.	2M	1	L1
2	Why do use pyranometer and its uses	2M	1	L1
3	Explain electro magnetic energy storage method	2M	2	L1
4	What do understand by photovoltaic conversion	2M	2	L1
5	What is Betz limit	2M	3	L1
6	List out three differences between horizontal and vertical axis wind turbine	2M	3	L1
7	Comment on the origin of geothermal energy	2M	4	L1
8	Compare and contrast different types of tides	2M	4	L1
9	What are the advantages of mini/micro hydro resources	2M	5	L1
10	Differentiate Seebeck and peltier effect	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	What are the reasons for variation in solar radiation reaching the earth than received at the onside of the atmosphere?	10M	1	L2
	OR			
12	Explain the working of Pyrheliometer with the help of neat sketch.	10M	1	L2
13	Enumerate different types of concentrating collectors and also list out advantages and limitations	10M	2	L2
	OR			
14	How are solar collectors classified? What are the important features of a solar collector	10M	2	L2
15	Discuss the prospects and status of wind energy in India	10M	3	L2
	OR			

16	Give a brief description on types of wind turbines	10M	3	L2
17	Discuss vapour dominated geothermal plant with a diagram	10M	4	L2
	OR			
18	What is the source of tidal energy? What is the minimum tidal range required for the working of a tidal plant? How much is the potential in tides?	10M	4	L2
19	With the help of a diagram explain the operation of closed cycle MHD generating system	10M	5	L2
	OR			
20	Comment on relative performance of fuel cells	10M	5	L2