QP Code: RJ23MTECH057 | Reg. No | | | | | | | | | | | AY 23

GIET UNIVERSITY, GUNUPUR – 765022

M. Tech (First Semester) Examinations, January – 2024

MPETE1032 - Renewable Energy System

(HPTE)

Time: 3 Hrs | Maximum: 70 Marks

(The figures in the right-hand margin indicate marks.)

PART – A **(2 x 10 = 20 Marks)**

Q.1. Answer all questions	CO#	Blooms Level
a. Compose the environmental impact of fossil fuels.	CO1	BTL-4
b. Name the various types of fossil fuel in the world	CO1	BTL-1
c. Point out the importance of solar energy in the present day energy crisis.	CO1	BTL-3
d. Define tip speed ratio (TSR).	CO2	BTL-3
e. Mention the advantages of grid tied wind power plant	CO2	BTL-1
f. Describe Energy storage system.	CO3	BTL-1
g. Summarize phase change material (PCM).	CO3	BTL-1
h. Explain the Solar Photovoltaic systems.	CO3	BTL-2
i. Describe Geothermal gradient.	CO4	BTL-2
j. Illustrate the drawbacks of geothermal energy.	CO4	BTL-3

PART – B **(10 x 5=50 Marks)**

Answer ANY FIVE questions	Marks	CO#	Blooms Level
2. a. Summarize in details about different types of hydro Electric Energy systems with neat diagram.	5	CO1	BTL-1
b. Briefly explain the limitations of Renewable Energy (RE) sources.	5	CO1	BTL-2
3.a. Evaluate the important role of conventional and non- conventional energy sources.	5	CO1	BTL-2
b. Compose the necessity of sustainable design and development for the prosper growth of human life in the world.	5	CO1	BTL-1
4. a. Explain in detail about the various components present in the wind power plant with neat sketch.	5	CO2	BTL-1
b. Classify the various types of rotor used in the wind turbine.	5	CO2	BTL-1
5.a. Explain about the various types of Wind Power Plant (WPPs).	5	CO2	BTL-1

b.	How would you deal with the assignment problems when some assignments are prohibited?	5	CO2	BTL-1
6. a.	Explain the in detail about the solar radiation phenomena.	5	CO3	BTL-4
b.	Explain and derive expression for beam and diffuse radiation.	5	CO3	BTL-5
7.a.	What are the reasons for variation in the amount of solar energy reaching earth surface?	5	CO3	BTL-4
b.	Explain the impacts of biomass construction, production, and operation.	5	CO4	BTL-4
8. a.	Discuss with a neat sketch the bio generation through fermentation.	5	CO4	BTL-3
b.	List out the classification of biogas plants and explain any two with neat sketch.	5	CO4	BTL-1

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