PVP 20

Code: 20EE2701A

IV B.Tech - I Semester – Regular / Supplementary Examinations
OCTOBER 2024

NON-CONVENTIONAL ENERGY RESOURCES
(Common for ALL BRANCHES)

Duration: 3 hours Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.
2. All parts of Question must be answered in one place.

BL – Blooms Level CO – Course Outcome

			BL	CO	Max. Marks
UNIT-I					
1	a)	Discuss the environmental impacts of solar power.	L3	CO3	7 M
	b)	Compare and contrast the conventional and non-conventional energy sources in detail.	L3	CO2	7 M
OR					
2	a)	Illustrate the working principle of shading ring Pyrheliometer in detail to measure solar radiation with neat sketch.	L3	CO3	7 M
	b)	Discuss the design of solar tracking mechanism to extract maximum solar radiation on tilted surface with neat sketch.	L3	CO3	7 M
UNIT-II					
3		Discuss the efficiency of solar cell with neat sketch and its equivalent electrical circuit.	L3	CO2	14 M

		OR			
4		Illustrate the working principle of solar water cooling mechanism with neat sketch.	L3	CO3	14 M
		UNIT-III			
5	a)	Outline HAWT wind turbine and its working principle with neat block diagram.	L4	CO4	7 M
	b)	Analyze the performance characteristics of a wind mill.	L4	CO5	7 M
		OR			
6	a)	Compare and contrast HAWT and VAWT wind mills in various aspects.	L3	CO3	7 M
	b)	Classify the OTEC power plants and explain the working principle of open loop OTEC with neat sketch.	L3	CO3	7 M
		UNIT-IV			
7	a)	Define anaerobic digestion and Illustrate about Batch type biogas plant with neat sketch.	L3	CO3	7 M
	b)	Illustrate vapour dominated geothermal power plant with neat diagram.	L3	CO4	7 M
		OR			
8		Explain the various methods to harvest geothermal energy from geothermal resources with neat sketch.	L3	CO3	14 M

UNIT-V					
9		Compare and contrast open loop MHD and closed loop MHD in various aspects.	L3	CO4	14 M
OR					
10	a)	Discuss the working principle of fuel cell with neat sketch.	L3	CO4	7 M
	b)	Compare and contrast any two fuel cells in various aspects.	L3	CO3	7 M