



CBCS SCHEME

BETCK105E

First Semester B.E./B.Tech. Degree Examination, June/July 2026 Renewable Energy Sources

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks, L: Bloom's level, C: Course outcomes.*

Module – 1			M	L	C
Q.1	a.	Define Renewable Energy Source and discuss renewable energy availability in India and World Wide.	10	L2	CO1
	b.	Write short notes on fundamental and social implications of Renewable Energy.	10	L2	CO1
OR					
Q.2	a.	Briefly describe Solar and Wind Energy.	10	L2	CO1
	b.	Write short notes on oil shale and Internet of Energy (IoE).	10	L2	CO1
Module – 2					
Q.3	a.	Define : i) Diffused radiation ii) Beam radiation iii) Irradiance iv) Solar constant	8	L1	CO2
	b.	With a neat diagram, explain construction and working of pyranometer and sunshine recorder.	12	L2	CO2
OR					
Q.4	a.	With a neat sketch explain the function of main components of solar Flat plate collector.	10	L2	CO2
	b.	With a neat diagram explain solar pond Electric Power Plant.	5	L1	CO2
	c.	Write the advantages, disadvantages and applications of solar energy.	5	L1	CO2
1 of 2					

Module – 3

Q.5	a.	What are the major problems associated with wind power plant?	6	L1	CO3
	b.	With a neat sketch, explain the working of Wind Energy Conversion System (WECS).	8	L2	CO3
	c.	Derive the expression for power developed due to wind.	6	L1	CO3

OR

Q.6	a.	Explain the working principle of Savonius and Darrieus Rotor.	10	L2	CO3
	b.	Explain with sketch down draft gasifier.	10	L2	CO3

Module – 4

Q.7	a.	Define Tide and what are the characteristics of Tides.	6	L1	CO4
	b.	Explain the Single Basin and Double Basin systems of tidal power harnessing.	8	L2	CO4
	c.	What are the advantages and limitations of wave energy?	6	L1	CO4

OR

Q.8	a.	With the block diagram, explain the working of closed cycle OTEC.	10	L2	CO4
	b.	What are the problems associated with OTEC.	10	L2	CO4

Module – 5

Q.9	a.	Explain the working principle of Molten Carbonate Fuel Cell.	10	L2	CO5
	b.	Discuss the advantages and disadvantages of Hydrogen Energy.	10	L2	CO5

OR

Q.10	a.	Describe various methods of storage of hydrogen.	10	L2	CO5
	b.	Explain Zero Energy Concepts.	10	L2	CO5

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