



# CBCS SCHEME

BETCK105E/BETCKE105

First Semester B.E./B.Tech. Degree Examination, June/July 2023  
**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.	Explain need for renewable energy sources.	5	L2	CO1
	b.	Compare renewable and non-renewable energy sources (any five)	10	L2	CO1
	c.	Briefly discuss solar energy source.	5	L2	CO1
OR					
Q.2	a.	Write a short note on i) IOE ii) Wind energy.	10	L2	CO1
	b.	Explain with a neat sketch construction and working of Geothermal energy power plant.	10	L2	CO1
Module – 2					
Q.3	a.	Define : i) Solar constant ii) insolation iii) Diffuse radiation	6	L2	CO2
	b.	With a neat diagram discuss the construction and working of pyrheliometer.	8	L2	CO2
	c.	With a neat sketch explain the working of sunshine recorder.	6	L2	CO2
OR					
Q.4	a.	With a line diagram, explain working of solar pond.	8	L2	CO2
	b.	Explain the working principle of photo voltaic cell with sketch.	6	L2	CO2
	c.	Discuss the advantages, disadvantages and application of solar energy.	6	L2	CO2
Module – 3					
Q.5	a.	With a neat block diagram, explain the working of wind energy conversion system.	10	L2	CO3
	b.	Draw and explain the construction and working of Horizontal axis wind mill.	6	L2	CO3
	c.	Compare between horizontal axis wind turbine and vertical axis wind turbine.	4	L2	CO3
OR					
Q.6	a.	Explain with a neat sketch fixed dome bio digester.	5	L2	CO3
	b.	Explain photo synthesis process.	5	L2	CO3
	c.	With a line diagram discuss the construction and working of down draft gassifier.	10	L2	CO3

Module – 4					
Q.7	a.	Explain with a sketch single basin tidal power plant.	10	L2	CO4
	b.	Explain wave energy and list out the advantages and limitations of wave energy.	10	L2	CO4
OR					
Q.8	a.	Explain with a neat sketch working of OTEC power plant.	10	L2	CO4
	b.	Discuss in detail about the problems associated with OTEC.	10	L2	CO4
Module – 5					
Q.9	a.	Sketch and explain construction and working of hydrogen fuel cell.	10	L2	CO5
	b.	Explain zero energy concepts.	4	L2	CO5
	c.	Classify fuel cell in details.	6	L2	CO5
OR					
Q.10	a.	Explain with a sketch electrolysis method for hydrogen production.	10	L2	CO5
	b.	Discuss different methods of hydrogen storage (any two)	6	L2	CO5
	c.	Write the advantages and disadvantages of hydrogen as fuel.	4	L2	CO5

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