

# CBCS SCHEME

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BETCK205E/BETCKE205

## Second Semester B.E/B.Tech. Degree Examination, June/July 2024 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
1	a.	List the difference between renewable and non-renewable energy sources.	8	L2	CO1
	b.	What is renewable energy source and explain the renewable energy availability in India.	8	L2	CO1
	c.	What are the limitations of renewable energy sources?	4	L2	CO1
<b>OR</b>					
2	a.	Write short notes on : i) Solar energy ii) Wind energy.	10	L2	CO2
	b.	Write short notes on : i) Biomass energy ii) Geothermal energy.	10	L2	CO1
<b>Module – 2</b>					
3	a.	With a neat diagram, explain Angstrom compensation pyr heliometer.	8	L2	CO2
	b.	With a neat diagram, explain flat plate collector.	8	L2	CO2
	c.	List the applications of solar photovoltaic system.	4	L2	CO2
<b>OR</b>					
4	a.	With a neat diagram, explain the solar pond electric power plant.	8	L2	CO2
	b.	List the advantages and disadvantages of photovoltaic solar energy conversion.	8	L2	CO2
	c.	Write short notes on solar distillation.	4	L2	CO2
<b>Module – 3</b>					
5	a.	With a neat block diagram, explain the basic components of wind energy conversion system.	8	L2	CO3
	b.	Derive an expression for power available in the wind.	8	L3	CO3
	c.	List the problems associated with wind energy.	4	L2	CO3
<b>OR</b>					
6	a.	With a neat diagram, explain fixed dome type biogas plant.	8	L4	CO2
	b.	With a neat block diagram, explain the waste refuse energy management system.	8	L4	CO2
	c.	Write short notes on downdraft biomass gasifier.	4	L4	CO2
<b>Module – 4</b>					
7	a.	With a neat diagram, explain the principle of tidal power generation.	8	L2	CO3
	b.	List the advantages and disadvantages of OTEC.	8	L2	CO5
	c.	List the applications of OTEC.	4	L2	CO5

OR

8	a.	With a neat diagram, explain the principle of ocean thermal energy conversion.	8	L2	CO3
	b.	List the advantages and limitations of tidal energy.	8	L2	CO3
	c.	List the advantage of wave power.	4	L2	CO3
<b>Module – 5</b>					
9	a.	With a neat diagram, explain the principle of operation of fuel cell.	8	L2	CO4
	b.	With a neat block diagram, explain the process of production of hydrogen by electrolysis method.	8	L2	CO5
	c.	List the types of fuel cells.	4	L2	CO4
<b>OR</b>					
10	a.	List and explain the methods of hydrogen energy storage.	8	L2	CO5
	b.	List the advantages and disadvantages of hydrogen energy.	8	L2	CO5
	c.	List the applications of hydrogen energy.	4	L2	CO5

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