

# CBCS SCHEME

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BETCK105E /BETCKE105

**First Semester B.E./B.Tech. Degree Examination, Jan./Feb. 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.	Write a short note on fundamental and social implication of renewable energy.	6	L2	CO1
	b.	Discuss India and worldwide Renewable Energy availability.	8	L2	CO1
	c.	Briefly describe Oil shale.	6	L2	CO1
<b>OR</b>					
Q.2	a.	Briefly describe energies from ocean.	6	L2	CO1
	b.	Write a short note on Internet of Energy (IOE).	6	L2	CO1
	c.	Discuss different ways of classification of renewable energy with example in each category.	8	L2	CO1
<b>Module – 2</b>					
Q.3	a.	Sketch and explain solar radiation on horizontal and inclined surfaces.	8	L2	CO2
	b.	With a neat diagram, explain Solar Pond Electric Power Plant.	6	L2	CO2
	c.	Explain the V-I characteristics of solar cell.	6	L2	CO2
<b>OR</b>					
Q.4	a.	What are the advantages and disadvantages of solar flat plate collectors?	6	L2	CO2
	b.	With a neat diagram, explain solar distillation.	6	L2	CO2
	c.	Briefly explain any four applications of solar photovoltaic system.	8	L2	CO2
<b>Module – 3</b>					
Q.5	a.	Derive the expression for power developed due to wind.	6	L2	CO3
	b.	Explain the various factors is wind turbine site selection.	6	L2	CO3
	c.	With a neat sketch, explain urban waste – to – energy conversion process.	8	L2	CO3
<b>OR</b>					
Q.6	a.	Discuss about wind characteristics.	6	L2	CO3
	b.	Describe the construction and working of fixed dome type bio-mass plant and its material aspects.	6	L2	CO3

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	c.	With the help of diagrams, explain the classification of Wind of Energy Conversion System (WECS).	8	L2	CO3
<b>Module – 4</b>					
Q.7	a.	Discuss the problems faced in exploiting tidal energy.	6	L2	CO4
	b.	With a neat diagram, explain double basin tidal power plant.	8	L2	CO4
	c.	What is the principle of working of OTEC?	6	L2	CO4
<b>OR</b>					
Q.8	a.	Explain the principle and working of wave energy. What are the limitations of wave energy?	10	L2	CO4
	b.	Briefly explain the problems associated with OTEC and OTEC power stations in the world.	10	L2	CO4
<b>Module – 5</b>					
Q.9	a.	Explain the principle and working of fuel cell.	6	L2	CO5
	b.	Classify fuel cells.	6	L2	CO5
	c.	Illustrate the problems associated with hydrogen energy.	8	L2	CO5
<b>OR</b>					
Q.10	a.	With a neat sketch, explain zero energy concepts.	6	L2	CO5
	b.	Explain with neat sketch electrolysis method of hydrogen production technology.	8	L2	CO5
	c.	Discuss advantages and disadvantages of hydrogen energy.	6	L2	CO5

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