Q. Code:306004

Reg. No. | | | | | | | | | | | | | |

B.E / B.TECH. DEGREE EXAMINATIONS, MAY 2024

Sixth Semester

OE18308 – GREEN ENERGY

(Common to all branches except CH)

(Regulation 2018 /2018A)

TIME:3 HOURS **MAX.MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Develop the knowledge about the current scenario of energy requirements.	**5**
CO 2	Apply the solar energy-based systems to meet the energy demand.	**3**
CO 3	Evaluate of the wind energy-based set-ups for energy management.	**5**
CO 4	Discuss the principles of ocean and tidal energy generation for the current and future energy needs.	**3**
CO 5	Interpret the various source of energy like nuclear, geo-thermal and hydropower to withstand the present and future energy requirements.	**5**

PART- A (10x2=20Marks)

(Answer all Questions)

		CO	RBT LEVEL
1	Exemplify non conventional energy resources	**1**	**2**
2	List the disadvantages of fossil fuels.	**1**	**2**
3	Mention a few solar energy collectors.	**2**	**2**
4	State the principle of photovoltaic conversion.	**2**	**2**
5	Sketch a wind rose.	**3**	**2**
6	Define: Coriolis force.	**3**	**2**
7	Identify the three forms of ocean energy.	**4**	**2**
8	Categorize the types of tides.	**4**	**2**
9	Identify a few parameters significant for the site selection of geothermal plants.	**5**	**2**
10	Give the principle behind MHD generators.	**5**	**2**

PART- B (5x 14=70Marks)

		Marks	CO	RBT LEVEL
11(a)	Compare the consumption pattern in advanced and developing countries based on uncertainties of the international issues.	**(14)**	**1**	**3**
	(OR)			
11(b)	Discuss in detail about the contribution of various types of fossil fuels towards energy generation.	**(14)**	**1**	**3**

12(a)	Interpret the principle and working of the following solar energy applications: (i) Solar pond (ii) Solar air-conditioning.	**(14)**	**2**	**3**
	(OR)			
12(b)	Explain the principle of photovoltaic cells and explain any four of its applications.	**(14)**	**2**	**3**
13(a)	Enumerate wind energy as a vital source of energy and explain the factors affecting the wind energy harvesting, in detail.	**(14)**	**3**	**3**
	(OR)			
13(b)	With a neat sketch explain the working of vertical axis wind mill. Also mention the various mechanisms adopted for the wind energy conversion.	**(14)**	**3**	**3**
14(a)	Discuss in detail about the working of open and closed cycle OTEC system. Also compare their relative merits and demerits.	**(14)**	**4**	**3**
	(OR)			
14(b)	Illustrate wave energy conversion systems and explain any one with neat a sketch.	**(14)**	**4**	**3**
15(a)	Identify the technologies available for recovering energy from liquid dominated geothermal systems and explain anyone with a neat sketch.	**(14)**	**5**	**3**
	(OR)			
15(b)	Explain the working principle of a nuclear reactor, along with the safety consideration to be followed during its operation.	**(14)**	**5**	**3**

PART- C (1x 10=10Marks)

(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
16	Summarize the current energy scenario and emphasize the importance of green energy.	**(10)**	**1**	**5**

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