Q.P. Code: 18ME0307 **R18**

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

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech III Year II Semester Supplementary Examinations February-2022

NON-CONVENTIONAL ENERGY RESOURCES

(Open Elective-I)

Time: 3 hours Max. Marks: 60

PART-A

(Answer all the Questions **5 x 2 = 10** Marks)

1	a	Write differences between renewable and nonrenewable sources.	**2M**
	b	List out various types of solar energy collectors.	**2M**
	c	Write the merits and demerits of wind power.	**2M**
	d	Mention various biomass converting processes.	**2M**
	e	List out components of the Tidal power plant.	**2M**

PART-B

(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

2	a	Discuss the Primary Energy sources in detail.	**5M**
	b	Interpret the merits and demerits of primary energy sources.	**5M**
		OR	
3		How do you classify the energy sources and brief them.	**10M**

UNIT-II

4	a	Explain the working of Pyrheliometer with a neat sketch	**6M**
	b	Illustrate the working of solar desalination system.	**4M**
		OR	
5	a	How do you convert saline water in to portable water? Explain	**4M**
	b	Explain the working of Pyrheliometer with a neat sketch.	**6M**

UNIT-III

6	a	Differentiate between HAWT and VAWT	**5M**
	b	Discuss about Savonius wind turbine with neat sketch	**5M**
		OR	
7		Illustrate the power generation process in HAWT with its merits and demerits.	**10M**

UNIT-IV

8	a	What is biomass direct combustion? Explain in detail.	**4M**
	b	Name various strokers used for the combustion of biomass and explain anyone with a neat figure.	**6M**
		OR	
9	a	Classify the Biomass energy conversion systems and explain them in brief.	**5M**
	b	What is meant by fermentation, aerobic, anaerobic digestion? Explain.	**5M**

UNIT-V

10		What is the basic principle of ocean thermal energy conversion? What are the main types of OTEC power plants? Describe their working.	**10M**
		OR	
11	a	What is the geothermal energy? Explain its extraction process.	**5M**
	b	Explain Geothermal binary cycle power plant with neat diagram.	**5M**

END