## B.E/B.TECH, M.E/M.TECH, MBA, MCA, POLYTECHNIC & SCHOOLS

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	Reg. No. :			
Ques	stion Paper Code: 20527			
soulisms lettings general.	18. (a) (b) Explana the multiple of searcy products.			
B.E./B.Tech. D	B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2022.			
	Seventh Semester			
Ele	ectrical and Electronics Engineering			
	3 — RENEWABLE ENERGY SYSTEMS			
	(Regulations 2017)			
Time: Three hours	Maximum: 100 marks			
	Answer ALL questions.			
	PART A — $(10 \times 2 = 20 \text{ marks})$			
1. List out the conseque	List out the consequences of usage of fossil fuel for many applications.			
	State the targets set by the Indian government for different kind of renewable energy based electricity production in India by the year 2022.			
3. Mention the purpose	Mention the purposes of pitch control in wind turbines.			
	Compare horizontal axis wind turbine with vertical axis wind turbine with respect to capacity, capital cost, maintenance cost and yaw control.			
5. What is meant by dir	rect and diffuse radiation?			
6. State the principle of	f solar photovoltaic cell.			
7. List out the resource				
8. Classify the hydro tu	urbines.			
9. How ocean tides are	created?			
10. Write the principle of	f attenuator for wave energy conversion.			
	PART B — $(5 \times 13 = 65 \text{ marks})$			
11. (a) Discuss about reference to Ind	the role and potential of renewable energy sources with dia.			
	Or			
(b) Explain the typ	pes and their principle of renewable energy sources.			

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	12.	(a)	Explain about the components in a wind power plant and their operation.
	12.	(4)	
		mes	Or
13		(b)	(i) Explain the power curve for a typical horizontal axis wind turbine. (7)
			(ii) Discuss about the siting requirements for wind power plants. (6)
	13.	(a)	(i) Explain the method of power production by using central receiver power plants with its schematic diagram. (6)
			(ii) Discuss about the characteristics of solar photovoltaic cells when they are connected in parallel and series. (7)
			Or
		(b)	(i) Describe the functioning of solar pond and its applications. (7)
			(ii) Explain how solar module and array or formed. (6)
			E 182 consist open)
	14.	(a)	Explain the biochemical processes to convert biomass into energy.
			Or
		(b)	Explain the principle and working of geothermal energy conversion process.
	15.	(a)	Describe the principle and working of ocean thermal energy conversion system.
			Or
		(b)	(i) Explain the construction and operation of proton exchange membrane fuel cell. (7)
			(ii) Discuss about the features and requirements of cryogenic storage system. (6)
			PART C — (1 × 15 = 15 marks)
	16.	(a)	Explain the concept of maximum power point tracking (MPPT) in solar PV systems. Explain any one MPPT algorithm with flowchart,
			Or and the least of the least o
		(b)	Discuss about the grid integration issues of wind power plants.
			$\operatorname{terion} \operatorname{GS} = \operatorname{S} \times \operatorname{S} ) = \operatorname{B} \operatorname{SIDM}$
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