



BRAINWARE UNIVERSITY

Term End Examination 2023
Programme – Dip.ME-2019
Course Name – Renewable Energy
Course Code - DME606B
(Semester VI)

Full Marks: 60

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question) 1 x 15=15 Choose the correct alternative from the following: (i) Which of the energy resources were considered for large scale use after the oil crisis of 1973? a) Conventional Sources b) Non-Conventional Sources c) Non-renewable sources d) Primary Sources (ii) Which non-conventional energy source has maximum power generation? a) Solar b) Wind c) Tidal d) Nuclear (iii) Which of the following is a part of a general wind energy conversion system? a) VAWT and HAWT. b) Differential. c) Parallel shaft and planetary shaft. d) Manual transmission. (iv) What is a planetary shaft gearbox? a) Input shaft and output shaft are aligned. b) Motor shaft and the speed controller shaft are on perpendicular planes. c) Motor shaft and the speed controller shaft Input shaft and output shaft are parallel. are on parallel planes. (v) Which of the following best describes world energy consumption? a) Total energy produced and used by b) Total energy consumed by humanity. humanity. c) Total energy consumed by humans in the d) Total energy produced by humans in the biological pyramid. biological pyramid. (vi) Power generation contains ___ a) mechanical systems. b) kinetic systems. c) electromagnetic and electrical subsystems. d) nuclear systems. (vii) Which of the following is NOT included in world energy consumption? a) Solar energy. b) Energy from food.

d) Energy from fossil fuels.

c) Energy from wind.

(VIII	What is a fixed speed WECS?		
(ix)	a) WECS operating at differential speeds.c) WECS operating at variable speeds.Why is there a demand for renewable sources of	b) WECS operating at non-differential sd) WECS operating at constant speed.of energy?	speeds.
	a) Because they emit greenhouse gases.	b) Because of low or zero carbon footp	orint.
	c) Because of the decreasing global temperatures.	d) Because they are more efficient.	
(x)	is an example of storing wind energ	gy chemically.	
	a) Flywheels.	b) Pumped storage.	
(xi)	c) Batteries. According to EIA what is the globally projected between 2018 and 2050?	d) Electro-hydrogen generation. increase in transportation energy	
	a) Less than 10%.	b) Between 10 and 20%.	
(xii)	c) Greater than 100%. Which of the following is the most usable form	d) Between 30 and 50%. of energy for future?	
	a) Solar.	b) Electricity.	
(xiii)	c) Thermal. Which of the following is also called as a flash s	d) Nuclear. steam plant?	
	a) Low temperature hydrothermal resource.	b) Dry steam.	
(xiv	c) Hydrogen. Which of the following are geothermal province	d) Hot water. es in India?	
	a) Telangana.	b) Coimbatore.	
/\	c) Manipur.	d) Godavari.	
(XV)	 What is ocean thermal energy conversion? a) Harnessing the temperature differences between surface waters and deep ocean waters. 	b) Harnessing the temperature different between the coastal waters and decocean waters.	ep
	c) Harnessing the heat energy from the underwater volcanoes.	 d) Harnessing the heat energy betwee surface water vapour and atmosphe gases. 	
	Grou (Short Answer Ty	•	3 x 5=15
			(3)
 Describe on the oil crisi of 1973. Describe the disadvantages of solar energy. 			
4. Identify the favourable sites for installing of wind turbines.			(3) (3)
5. Identify the major disadvantages of wind power.			(3)
	valuate the heating value of charcoal. How much pecific applications.	is the carbon content and what are its	(3)
	OF		(0)
	stify the approximate efficiency of fuel wood whethod as compare to non-conventional method.		(3)
	Grou	р-С	
	(Long Answer Ty	pe Questions)	5 x 6=30
	Debate on dry steam system and hot water syste point of applications	m based on their working principal and	(5)
	8. Predict the advantages of Anaerobic Digestion.		
	9. Express a relation where a horizontal surface receives no ground reflected radiation.		
	 Identify the basic features required in an ideal pyranometer. Identify the advantages of wind energy over solar energy. 		
	man, and advantages of time energy over sold	· -··-·01·	(5)

12. Debates on the advantages on various type of geothermal energy sources.	(5)
OR	
Debate on various types of geothermal energy sources and their prospects in India.	(5)
