GUJARAT TECHNOLOGICAL UNIVERSITY
Bachelor of Vocation - SEMESTER - IV EXAMINATION - WINTER 2025

Subject Code: 1140701   **Date: 12-11-2025**

Subject Name: **Introduction to Wind Energy Engineering**

Time: 02:30 PM TO 04:30 PM   **Total Marks: 50**

Instructions
1. Attempt all questions.
2. Make Suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Use of simple calculators and non-programmable scientific calculators are permitted.

			Marks
Q.1	**(a)**	Draw the block diagram of wind energy conversion system	**05**
	(b)	Explain site selection of wind power plant.	**05**
Q.2	**(a)**	Give historical data of wind power plant in Gujarat.	**05**
	(b)	Give the types of anemometer and explain Cup type anemometer.	**05**
		OR	
	(b)	What is LiDAR and how it works in wind energy.	**05**
Q.3	**(a)**	Explain types of wind turbine in wind power.	**05**
	(b)	Define the terms a)Cut in speed, b)Cut out Speed, c)Rated speed, d)Pitch control, e) Yaw control, f) Lift force, g) Drag force	**05**
		OR	
	(a)	Define power output equation for wind energy	**05**
	(b)	What is bets limit? Explain in detail	**05**
Q.4	**(a)**	Explain induction generator in detail	**05**
	(b)	Explain construction and working of synchronous generator.	**05**
		OR	
	(a)	What is wind turbine load characteristics? Explain in detail.	**05**
	(b)	What is grid interfacing and how can the grid connection be made?	**05**
Q.5	**(a)**	Discuss the issues related to grid interconnection of wind farms.	**05**
	(b)	Explain microprocessor based control system for wind farms.	**05**
		OR	
	(a)	Explain the routine maintenance procedures of wind turbine.	**05**
	(b)	What is troubleshooting in wind turbines?	**05**

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