Unit-3

S.No	Questions	BT	CO	PO
	Part -A (Short Answer Questions)			
1	define a fixed-speed wind turbine.	L1	CO3	1
2	What is a variable-speed wind turbine?	L1	CO3	1
3	What does WECS stand for?	L1	CO3	1
4	List the major components of a Wind Energy Conversion System (WECS).	L1	CO3	1
5	What is the function of a wind turbine rotor?	L1	CO3	1
6	Define cut-in wind speed and cut-out wind spee	L2	CO3	2
7	What are the different types of wind turbine generators?	L2	CO3	2
8	What is the role of a gearbox in a wind turbine?	L2	CO3	2
9	What is a doubly fed induction generator (DFIG	L2	CO3	1
10	Define capacity factor of a wind power plant.	L1	CO3	2
11	What are the economic factors affecting wind er systems?	L1	CO3	2
12	What is the function of a power electronic conv in WECS?	L2	CO3	1

S.No	Questions	BT	CO	PO
	Part -B (Long Answer Questions)			
1.	Explain the working principle of fixed-speed and variable-speed wind turbines with neat diagrams.	L3	CO3	2
2.	Describe the components of a Wind Energy Conversion System (WECS) and explain the function of each component.	L3	CO3	2
3.	Discuss different types of wind turbine generators used in modern wind energy systems.	L3	CO3	2

4.	Explain the construction and operation of a squirrel cage induction generator used in wind turbines.	L3	CO3	3
5.	Describe the operation and advantages of Doubly Fed Induction Generator (DFIG) based wind turbines.	L3	CO3	2
6.	Explain the economics of Wind Energy Conversion Systems and discuss factors affecting the cost of wind power generation	L2	CO3	1
7.	Explain the working principle of fixed-speed and variable-speed wind turbines with neat diagrams.	L2	CO3	2
8.	Describe the working of a permanent magnet synchronous generator (PMSG) based wind energy system.	L2	CO3	2
9.	Draw and explain the block diagram of a grid-connected wind energy conversion system	L2	CO3	1
10	Explain the advantages and disadvantages of grid-connected wind energy systems.	L2	CO3	2