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

Question Paper Code:U2504

M.E. DEGREE EXAMINATION, APRIL / MAY 2025

Second Semester

21PPE204 – POWER CONVERTERS FOR RENEWABLE ENERGY SYSTEMS

POWER ELECTRONICS AND DRIVES

(Regulations 2021)

Duration: Three hours | Maximum: 100 Marks

Answer ALL Questions

PART – A (5 x 20 = 100 Marks)

1.	(a)	Give a detailed overview of India's Energy Scenario with necessary charts.	CO1 - U	(20)
		Or		
	(b)	Explain with statistical data, how India is suitable for implementing new Solar and wind power plants.	CO 1- U	(20)
2.	(a)	Explain the Maximum Power Point Tracking Algorithm.	CO1 - U	(20)
		Or		
	(b)	Draw the battery control circuitry for standalone PV system. How MPPT system influences on battery charging and discharging characteristics?	CO1 - U	(20)
3.	(a)	Discuss the power control of grid connected inverters with necessary diagrams and characteristics.	CO3- App	(20)
		Or		
	(b)	Explain the working concept of grid connected PV systems. Also discuss the technical issues of the same. Mention IEEE standards for grid interactive PV system.	CO3- App	(20)
4.	(a)	With a neat sketch, describe the operation of PV-Diesel hybrid system.	CO4 - U	(20)
		Or		
	(b)	Explain the various types of Wind Turbines in detail.	CO4 - U	(20)

5.	(a)	Discuss the Gate drive Circuits used in controller circuit for Wind Energy Conversion System.	CO5 - App	(20)
		Or		
	(b)	Simulate the various Power quality issues in Hybrid Renewable Energy system.	CO5 - App	(20)