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

Question Paper Code:U5406

M.E. DEGREE EXAMINATION, NOV 2024

Professional Elective

Power Electronics and Drives

21PPE506 - MODERN RECTIFIERS AND RESONANT CONVERTERS

(Regulations 2021)

Duration: Three hours | Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1.	(a)	Design the capacitor for minimize the THD in rectifiers	CO1-U	(20)
		Or		
	(b)	Design the rectifier with large capacitor and discuss the behavior in detail.	CO1-U	(20)
2.	(a)	Construct the Boost rectifier and derive the expression for controller duty cycle.	CO2-U	(20)
		Or		
	(b)	Construct the Hysteresis control & non linear control methods of rectifiers.	CO2-U	(20)
3.	(a)	Analyze the Zero current Switching and Zero Voltage Switching?	CO3-App	(20)
		Or		
	(b)	Analyze the Quasi resonant Boost Converter?	CO3-App	(20)
4.	(a)	Derive the State Space Averaged model for an ideal Buck Converter and analyze the performance.	CO4-App	(20)
		Or		
	(b)	Derive the State Space Averaged model for an ideal Boost Converter and analyze the performance.	CO4-App	(20)
5.	(a)	Explain about Voltage mode PWM Scheme and Current mode PWM Scheme.	CO5-Ana	(20)
		Or		
	(b)	Explain in detail about Optimal Controller for the source current shaping of PWM rectifiers.	CO5-Ana	(20)