


Name:			
Enrolment No:			
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES End Semester Examination, December 2022			
Course: Power Electronics & Drives			
Semester: VII			
Program: B. Tech (MECHATRONICS)			
Time : 03 hrs.			
Course Code: EPEG3002		Max. Marks: 100	
Instructions:			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	What is the difference between power diode and signal diode?	4	CO1
Q 2	Compare Power MOSFET with BJT.	4	CO1
Q 3	What is the function of freewheeling diodes in controlled rectifier? What are the advantages of freewheeling diodes in a controlled in a controlled rectifier?	4	CO 2
Q 4	What are the different types of chopper configuration?	4	CO 3
Q 5	What is the main classification of inverter? Write two advantages of CSI.	4	CO 5
SECTION B (4Qx10M= 40 Marks)			
Q 1	Explain basic principles and different operation of step-down chopper. Show that current ripple is maximum when $D = 0.5$, in step down chopper.	10	CO3
Q 2	Derive the output voltage of the boost converter with proper waveforms.	10	CO 3
Q 3	A single phase halfwave controlled rectifier is used to supply power to 10 ohm load from 230V, 50 Hz supply at a firing angle of 30° . Calculate	10	CO 4

