Enrolment Number: _____

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.TECH MIDSEM EXAMINATION
7th SEMESTER
ACY -2022-23 (EVEN SEM)

Subject Name (Code): Electrical Drives (203106437) Branch: EE
Date: *03/08/2022* Time: 10:30 AM TO 12:00 PM Total Marks: 40

Sr. No.		Marks
Q.1	(A) One line Questions	05
	(1) For the high-frequency choppers, the power semiconductor device that is preferred is _	
	(2) If the current in the armature of d.c series motor is reduced to 5%, the torque of the motor will become:	
	(3) In the D.C motor, Which speed control method preferred for constant torque drive?	
	(4) A step up chopper has input voltage 110 V and output voltage 150 V. The value of duty cycle is _	
	(5) Choppers is converts power in to power.	
	(8) Derive the Induced emf equation for D.C. motor.	05
Q.2	Attempt any four(Short Questions)	12
	(1) What are the reasons to AC drive more popular then DC drive?	
	(2) What is a change in speed-torque characteristics when resistance of shunt D.C. motor increased or decreased explain using diagram?	
	(3) What are the disadvantages of armature resistance control method?	
	(4) Draw torque-speed characteristics of DC separately excited, shunt and series motors	
	(5) Draw the all four torque-speed characteristics of mechanical load.	
Q.3	Attempt any two	08
	(1) What are the differentiate between two-quadrant and four-quadrant drives.	
	(2) Draw and Explain Type-A chopper based DC drive.	
	(3) Draw and explain Two quadrant type-C chopper based DC drive.	
Q.4	(A) Draw and explain control block diagram DC drive.	05
	(8) Draw and explain the current loop and speed loop control in DC Drive.	05
	OR	
	(8) Derive the dynamic equations and transfer functions of DC drive and draw the dynamic model of dc motor.	05