K. K. Wagh Institute of Engineering Education & Research, Nashik

(An Autonomous Institute From A.Y. 2022-23)

WINTER-2025	
Exam Seat No.:	
Academic Year:2025-2026	Semester:VII
Class:FINAL	Program:B.Tech
Branch Code:ETC	Pattern:2022
Name of Course:Drives and Control	Course Code:ETC224006D
Max. Marks:30	Duration:2.30 Hrs.

Instructions: Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains 2 page(s).
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

		Marks	CO
Question No. 1			
1	Explain Significance of electric drive?	(3)	CO1
Question No. 2			
2	Compare dc shunt motor and dc series motor.	(3)	CO2
Question No. 3			
3.a)	What is the necessity for starter?	(4)	CO3
	OR		
3.b)	Explain the starters for slip –ring induction motors?	(4)	CO3
3.c)	Describe the two primary methods used for controlling the speed of a DC shunt motor.	(4)	CO3
	OR		
3.d)	Explain the key difference between the control circuit for a DC series motor and a DC shunt motor regarding the inclusion of a starter.	(4)	CO3
Question No. 4			
4.a)	Explain the field control methods used for d.c series motor for speed control.	(4)	CO4
	OR		
4.b)	Compare D.C. and A.C. drives?	(4)	CO4
4.c)	Describe how a single-phase controlled rectifier (SCR-based) can be used to control the speed of a DC motor.	(4)	CO4
	OR		
4.d)	What is the role of a DC Chopper in a modern DC drive system?	(4)	CO4
Question No. 5			
5.a)	What are the speed control methods available to control speed from rotor side?	(4)	CO5

OR

5.b)	What is slip power recovery scheme?	(4)	CO5
5.c)	Explain the concept of Slip Power Recovery in a wound-rotor induction motor.	(4)	CO5

OR

5.d)	Compare the efficiency considerations of the following three speed control methods for an induction motor operating below synchronous speed: a)Rotor Resistance Control. b) Stator Voltage Control.	(4)	CO5

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