GUJARAT TECHNOLOGICAL UNIVERSITY PDDC SEMESTER VIII– EXAMINATION – SUMMER 2017

Subject Code:X80903 Date: 05/0		5/2017	
Subject Name: Electrical Drives & TractionTotal Marks: 70Time: 10.30AM to 01.00PMTotal Marks: 70Instructions:1. Attempt all questions.2. Make suitable assumptions wherever necessary.3. Figures to the right indicate full marks.			
Q.1	(a)	Discuss major factors to be considered while selecting an electric drive.	07
	(b)	What are the requirements of Ideal Traction System?	07
Q.2	(a)	Discuss the advantages and disadvantages of electrical drives.	07
	(b)	 Explain following terms clearly. (1) Tractive effort. (2) Co efficient of adhesion. (3) Train resistance (4) Specific energy consumption of train. 	07
	(b)	Compare A.C traction system and D.C Traction system.	07
Q.3	(a)	What is a Speed-Time curve? Discuss briefly the distinct period in a typical speed time curve of a train running on main line.	07
	(b)	Compare group drive with individual drive. OR	07
Q.3	(a)	What is Electric Braking? Explain regenerative braking in detail.	07
	(b)	Draw and discuss Speed-Time curves for Urban, Sub-urban and Main Line services.	07
Q.4	(a)	Explain what are the different overhead equipments used for traction system.	07
	(b)	Explain Group drive, Individual drive and Multi motor drive. OR	07
Q.4	(a)	Discuss various speed control methods of three phase induction motor in brief.	07
	(b)	Derive an expression of specific energy output on level track using a simplified speed –time curve.	07
Q.5	(a)	What do you mean by drive? Explain multi quadrant operation of electric drive.	07
	(b)	What do you understand by Tractive efforts? Derive the expression for the same.	07
0.5	(a)	OR Describe running characteristics of DC series and shunt motors	07
Z	(h)	Write technical note on "Load equalization and flywheel"	07
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