Seat No.:	Enrolment No

Subject Code: 2162603

Time: 10:30 AM to 01:00 PM

Subject Name: Rubber Equipment Design-I

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER - VI (NEW).EXAMINATION - WINTER 2016

Date:25/10/2016

Total Marks: 70

Instructions:				
	1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a)	Discuss the importance of Cross mixing. Write in detail about the "Cross Mixing Device".	(07)	
	(b)	Short Note on "Streamlines & Velocity profiles in Rolling Nips."	(07)	
Q.2	(a)	Short Note on Roll bearings of Calender Machine.	(08)	
	(b)	Answer the following.	(06)	
	(i)	Give the specifications of Bearing Block & Liner for 13 ½"X 14 ½" Calender Machine.		
	(ii)	Which are the important demands for a Calender Machine?		
	(iii)	Which problem may be occurred in final product of Calender sheet? Write the causes & its remedies for it.		
		OR		
	(b)	Explain the Calculation of Calender Roll separating Force.	(06)	
Q.3	(a)	Short note on "Fill Factor" in Internal Mixer.	(07)	
	(b)	Explain about the function of wing. Write the effect of trailing and leading angle of wing in Internal Mixer.	(07)	
		OR		
Q.3	(a)	Discuss in detail about different Ram Configuration in Internal Mixer with their advantages & disadvantages.	(07)	
	(b)	Discuss in detail about flow analysis in Internal Mixer.	(07)	
Q.4	(a)	Describe in detail about the Pressure Accumulator. Derive the formula for Capacity of Accumulator	(07)	
	(b)	Explain in detail about designation of Mechanical Presses with example. OR	(07)	
Q.4	(a)	A Hydraulic Press has a ram of 12cm. dia. & plunger of 1.5 cm dia. Determine the load lifted if a force of 294.3 N is applied to the plunger. If the plunger has a stroke of 20 cm, how many strokes will be required to lift weight by 0.50 m? also calculate the volume of additional liquid required & the power of motor driving the plunger if the time taken by the press is 15 minutes.		
Q.4	(b)	Explain the Hydraulic Principle. Write in detail about Hydraulic Press.	(07)	
Q.5	(a)	Discuss in detail about the Materials used for manufacturing of High Pressure Vessels.	(07)	
	(b)	Which are principal stresses produced in the wall of shell in Autoclave due to high pressure? Explain in detail with their formula.	(07)	

Q.5	(a)	Answer the following.
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- (i) Write the importance of Jacket for Autoclave. How many methods are used (04) for providing Jackets? Explain with figure.
- (ii) Write about the Autofrettage construction for Autoclave. (03)
- (b) Short Note on Removable Closures used in Autoclave. (07)
