Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV (New) EXAMINATION – WINTER 2015

Subject code: 2142603 **Date: 04 /01/2016**
Subject Name: Rubber Engineering
Time: 02.30pm-05.00pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q. 1		Answer the following.	**(14)**
	(i)	List the requirements of good compound and mixing process.	
	(ii)	Write about profile calender.	
	(iii)	Define the following terms: (i) L/D ratio (iii) Pitch	
	(iv)	How the rubber injection moulding differ from plastic injection moulding?	
	(v)	Give the full name of FCM. Write its applications.	
	(vi)	State the Hydraulic principle.	
	(vii)	How flash and spew removal is carried out by machine trimming process?	
Q. 2	**(a)**	Give a detailed Comparison between mixing mill and internal mixer according to their performance.	**(07)**
Q. 2	**(b)**	Discuss about gauge control and temperature control for calender machine.	**(07)**
		OR	
Q. 2	**(b)**	Draw the labeled diagrams of calender configurations and operations.	**(07)**
Q. 3	**(a)**	Explain the differences between the ram extruder and screw extruder.	**(07)**
	(b)	Answer the following:	
	(i)	What do you mean by ‘pebbling’ in terms of moulding? Write their cause and remedy.	**(03)**
	(ii)	Short note on ‘mould releasing agents’.	**(04)**
		OR	
Q. 3	**(a)**	Discuss about the Pin QSM extruder.	**(07)**
	(b)	Answer the following:	
	(i)	Define the terms: (i) Cavity (ii) Sprue bush (iii) Runner	**(03)**
	(ii)	Explain the classification of mould according to their operations.	**(04)**
Q. 4	**(a)**	Discuss in detail about classification of compression mould.	**(07)**
	(b)	Answer the following.	
	(i)	Give the advantages and disadvantages of Transfer moulding.	**(04)**
	(ii)	Write about the low temperature tumbling process.	**(03)**
		OR	
Q. 4	**(a)**	List the advantages and disadvantages of compression moulding.	**(07)**
	(b)	Answer the following:	
	(i)	Explain the pot type transfer moulding with figure.	**(04)**
	(ii)	Explain the main sources of potential danger, causes of accident and	**(03)**

method of guarding for mixing mill.

Q. 5	**(a)**	List the factors that may favour the use of a hydraulic press.	**(07)**
	(b)	Answer the following:	
	(i)	Write any four advantages of injection moulding process.	**(04)**
	(ii)	Write the limitations of reciprocating type injection unit.	**(03)**

OR

Q. 5	**(a)**	Discuss about the classification of hydraulic press.	**(07)**
	(b)	Answer the following:	
	(i)	List the machine controls and process variables for injection moulding machine.	**(04)**
	(ii)	Write the basic features of ideal clamping unit.	**(03)**

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