Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Sem-IV Examination June-2010

Subject code: 142603 **Subject Name: Rubber Engineering**

Date: 19 / 06 /2010 **Time: 10.30 am – 01.00 pm**

Total Marks: 70

Instructions:

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

Q.1	**(a)**	Answer the following	
	(i)	Write in brief about the type of calendar used for profiling.	**02**
	(ii)	Is fractioning done on both the sides of fabric? Why?	**02**
	(iii)	List the compound related causes affect the accuracy in calendaring.	**02**
	(b)	Answer the following	
	(i)	Write about the device used to control the thickness of rubber sheet.	**04**
	(ii)	Explain the main sources of potential danger, typical causes of accident and method of guarding for mixing mill and calendar respectively.	**04**
Q.2	**(a)**	Answer the following	
	(i)	Write a short note on kneader.	**04**
	(ii)	Compare single geared mixing mill with double geared mixing mill.	**03**
	(b)	Explain following parameters with respect to internal mixer: (i) Rotor Speed (ii) Rotor Geometry	**07**
		OR	
	(b)	Write about the construction and working of Transfer Mix.	**07**
Q.3	**(a)**	Answer the following	
	(i)	Write a short note on Pin QSM extruder.	**06**
	(ii)	Explain 'Fish Tail Head' of extruder	**04**
	(b)	How the flash removal in large scale production is carried out by low temperature tumbling?	**04**
		OR	
Q.3	**(a)**	Answer the following	
	(i)	Write short note on Duplex Extruder	**06**
	(ii)	Define the following terms: (i) L/D ratio (ii) Flight (iii) Pitch (iv) Compression ratio	**04**
	(b)	Which method is used to reduce co-efficient of friction for rubber compound? Explain it.	**04**
Q.4	**(a)**	Answer the following	
	(i)	Explain the Reaction Injection Moulding.	**04**
	(ii)	Write about Compression Moulding.	**04**

	(b)	Answer the following	
	(i)	Draw labeled diagram of pot type transfer moulding showing different stages of moulding.	**04**
	(ii)	Higher injection pressure and more accurate shots are obtained with ram type injection moudling machine than screw type injection machine-why?	**02**

OR

Q.4	**(a)**	Answer the following	
	(i)	Write about the clamping unit of Injection Moulding Machine.	**04**
	(ii)	Draw labeled diagrams of various types of Compression Mould.	**04**
	(b)	Answer the following	
	(i)	Give the advantages and disadvantages of Transfer Moulding.	**04**
	(ii)	Consistent part quality is difficult to achieve in case of transfer moulding-why?	**02**
Q.5	**(a)**	Discuss in detail about classification of Hydraulic Press.	**08**
	(b)	Discuss the following moulding problems with their causes and remedies: (i) Backrinding (ii) Bloom	**06**

OR

Q.5	**(a)**	Discuss in detail about classification of Compression Moulding Press.	**08**
	(b)	Explain the following moulding problems with their causes and remedies: (i) Air Marking (ii)Porosity	**06**

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