Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E SEMESTER-IV EXAMINATION SUMMER-2015

Subject code: 142603 **Date: 05/06/2015**

Subject Name: Rubber Engineering

Time: 10.30am-01.00pm **Total Marks: 70**

Instructions:

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

Q.1	**(a)**	What do you mean by calendar bowl deflection? Which methods are available to rectify it? Explain any one in detail.	**07**
Q.1	**(b)**	Answer the following	
	i	Draw different roll configurations of four roll calendar.	**03**
	ii	Write down the main sources of potential danger, typical sources of accidents and methods of guarding for mixing mill and internal mixer respectively.	**04**
Q.2	**(a)**	Write a short note on cold feed extruder. Also list the factors affecting output of extruder.	**07**
Q.2	**(b)**	Answer the following	
	i	Define the given terms: (i) Extrusion (ii) Extrudate (iii) Pitch	**03**
	ii	Which method is used to lower the coefficient of friction of rubber surface? Explain that method.	**04**
		OR	
Q.2	**(b)**	Answer the following	
	i	Define the given terms: (i) L/D Ratio (ii) Compression Ratio (iii) Start	**03**
	ii	How the flash of vulcanizate is removed by grinding and hand trimming respectively?	**04**
Q.3	**(a)**	Give the classification of two roll mixing mill. Also explain the open mill mixing with suitable formulation.	**07**
Q.3	**(b)**	Answer the following	
	i	Write down the requirements of good compound mix and mixing process.	**03**
	ii	Explain the given features with respect to internal mixer: (i) Rotor Speed (ii) Rotor Design	**04**
		OR	
Q.3	**(a)**	Discuss the problems associated with mixing process.	**07**
Q.3	**(b)**	Answer the following	
	i	What do you mean by tandem mixing?	**02**
	ii	Explain the given features with respect to internal mixer: (i) Ram Pressure (ii) Discharge Door	**05**
Q.4	**(a)**	Discuss in detail about the types of compression moulding process.	**07**
Q.4	**(b)**	Answer the following	
	i	Write down the advantages and disadvantages of transfer moulding.	**04**
	ii	Define the given terms: (i) Core (ii) Cavity (iii) Parting line	**03**
		OR	

Q.4	**(a)**	Discuss the types of transfer moulding process.	**07**
Q.4	**(b)**	Answer the following	
	i	Write down the advantages and disadvantages of compression moulding process.	**04**
	ii	Define the given terms: (i) Sprue (ii) Runner (iii) Gate	**03**
Q.5	**(a)**	Answer the following	
	i	Write down the causes and remedies for sponging.	**03**
	ii	Explain the injection moulding process. Also differentiate the rubber inection moulding machine and plastics injection moulding machine.	**04**
Q.5	**(b)**	Discuss the major components of press with their functions.	**07**

OR

Q.5	**(a)**	Answer the following	
	i	Write down the causes and remedies for flow cracks.	**03**
	ii	Explain the reciprocating type injection unit of injection moulding machine.	**04**
Q.5	**(b)**	State hydraulic principle. Discuss in detail about the classification of hydraulic press.	**07**

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