Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. - SEMESTER – VII • EXAMINATION – WINTER 2012

Subject code: 172601 **Date: 26/12/2012**

Subject Name: Rubber Equipment Design-II

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	**(i)**	List the basic requirements for successful operation through Die.	
	(ii)	Which are the important aspects while designing the Die?	
	(b)	Explain in detail about Die Geometry.	**(08)**
Q.2	**(a)**	"An Extrusion die is an essentially a stream lined channel". Justify the statement in detail.	**(04)**
	(i)		
	(ii)	Define the term (1) Projected area (2) Locking force (3) Sink Mark.	**(03)**
	(b)	Explain the difference between Pressure & Force with example.	**(04)**
	(i)		
	(ii)	A press with a 200 tons force capability .what is the largest square sheet that can be molded in this press while maintaining a pressure of 1000 Psi?	**(03)**
		OR	
	(b)	Explain the flow of rubber in Plunger-type Transfer Mold.	**(07)**
Q.3	**(a)**	Explain in detail about Thermal Considerations for Compression Molding.	**(07)**
	(b)	Short note on 'Spure'.	**(07)**
		OR	
Q.3	**(a)**	Define the term 'Shrinkage'. Discuss the factors affecting Shrinkage.	**(07)**
	(b)	Which points should kept in mind while designing the runner in Transfer Mold? Explain each point in detail.	**(07)**
Q.4	**(a)**	Write an overview of heating & cooling systems for rubber extruder.	**(07)**
	(b)	Discuss in detail about the construction of extension barrel for extruder used in rubber industry.	**(07)**
		OR	
Q.4	**(a)**	Explain about pressure drop due to screen pack in rubber extruder.	**(07)**
	(b)	Discuss about Action of the screw in terms of rubber extruder.	**(07)**
Q.5	**(a)**	How the Parameters like Screw cooling, Pressure control & timing and Nozzle temperature & its design play a major part in the quality of a moulding or the performance of the Injection molding Machine?	**(07)**
	(b)	For Rubber Injection Molding machine give the comparison between FILO (first in last out) and FIFO (first in first out) types of injection units.	**(07)**
		OR	
Q.5	**(a)**	Discuss in detail about different factors for determining the number of cavities for injection mould.	**(07)**
	(b)	"The successes of the whole Injection moulding operation may depend on satisfactory mould design", Explain the statement in detail.	**(07)**

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