

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2023****Subject Code:3162603****Date:04-07-2023****Subject Name:Rubber Equipment Design****Time:10:30 AM TO 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.
4. Simple and non-programmable scientific calculators are allowed.

		<b>MARKS</b>
<b>Q.1</b>	(a) Write the different types of mold release agent used in compression molding.	<b>03</b>
	(b) Give the importance of thermal consideration in compression molding.	<b>04</b>
	(c) Draw the diagram of Transfer molding and Explain it in detail.	<b>07</b>
<b>Q.2</b>	(a) Give the advantages and disadvantages of Hot runner system.	<b>03</b>
	(b) Explain the factors on which number of cavities depend.	<b>04</b>
	(c) Discuss in details about the different Bolster used in rubber Injection molding.	<b>07</b>
<b>OR</b>		
	(c) Draw and explain the different types of Injection unit used in rubber industry.	<b>07</b>
<b>Q.3</b>	(a) Write the function of Die and list out the different classification of Die.	<b>03</b>
	(b) List out the different components and its function for Extruder machine.	<b>04</b>
	(c) Discuss in detail about the stream line of Extrusion dies.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) Define the term: (i) Lead (ii) Pitch (iii) Compression ratio	<b>03</b>
	(b) Give the difference between Hot feed extruder and Cold feed extruder.	<b>04</b>
	(c) Discuss in detail about Die geometry and its material of construction.	<b>07</b>
<b>Q.4</b>	(a) Write the different parts of Power Press.	<b>03</b>
	(b) List out the factors affecting the Shrinkage and Explain any one.	<b>04</b>
	(c) Explain in detail about different types of roll configuration for Calendar.	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	(a) Write the different types of Design frame used in hydraulic press.	<b>03</b>
	(b) List out the properties require for Sprue Bush.	<b>04</b>
	(c) Discuss the construction and working of Roll cross axis device.	<b>07</b>
<b>Q.5</b>	(a) List out the factors on which batch size of Internal mixer depends.	<b>03</b>
	(b) Draw the cross section of Two roll mill and write its nomenclature	<b>04</b>
	(c) Discuss in detail about the different operating variables of internal mixer.	<b>07</b>

**P.T.O**

**OR**

- Q.5** (a) How to measure the batch weight of mixing mill? Explain it with suitable example. **03**
- (b) Draw the Rotor design of Farrel synchronous technology and standard mixing rotor. **04**
- (c) Explain in detail about heat transfer in Internal mixer. **07**

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