

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2142603

Date: 12/06/2017

Subject Name: Rubber engineering

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.

- Q.1** Answer the following **14**
1. Define the term 'Dispersion'.
 2. What do you mean by open mixing?
 3. List any two factors affecting the output of extrusion process.
 4. What is an alternate name of hopper incase of extruder?
 5. Give any major limitations of transfer mix.
 6. Give any two roll configurations of three roll calendar.
 7. Categorize the problems affecting the efficiency of calendaring process.
 8. What do you mean by blooming?
 9. List any two factors responsible for pebbling.
 10. Which mould releasing agents are frequently used in rubber industries?
 11. Write down the types of mould according to the cavity.
 12. Define the term 'press'.
 13. List the methods used to carry out the trimming of rubber vulcanizate.
 14. Which is a method of guarding in case of press?
- Q.2** (a) What are the requirements of good compound mix and mixing process? **03**
- Q.2** (b) Write down the advantages and disadvantages of batch mixing. **04**
- Q.2** (c) Discuss in detail about major components of mixing mill with their functions. **07**
- OR**
- Q.2** (c) Give detail comparison between Internal Mixer and Kneader. **07**
- Q.3** (a) Write a note on extruder as a 'plasticator'. **03**
- Q.3** (b) Explain in brief about the given features of extruder:(i) Feed Hopper (ii) Screw **04**
- Q.3** (c) Discuss in detail about the fractioning operation with respect to calendar. **07**
- OR**
- Q.3** (a) Write a note on extruder as a 'strainer' **03**
- Q.3** (b) Explain in brief about the given features of extruder:(i) Barrel (ii) Head **04**
- Q.3** (c) Discuss in detail about the major processing problems associated with calendaring process. **07**
- Q.4** (a) Define the given terms:(i) Core (ii) Cavity (iii) Gate **03**
- Q.4** (b) Explain the reasons and remedies for air marking. **04**
- Q.4** (c) Discuss in detail about the compression moulding process. **07**
- OR**
- Q.4** (a) Define the given term:(i) Transfer Pot (ii) Sprue (iii) Runner **03**
- Q.4** (b) Explain the reasons and remedies for starvation. **04**
- Q.4** (c) Discuss in detail about the transfer moulding process. **07**

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- Q.5 (a)** List the major components of press. **03**
- Q.5 (b)** Explain the battery operation of hydraulic press. **04**
- Q.5 (c)** Discuss in detail about the types of injection units of injection moulding process. **07**
- OR**
- Q.5 (a)** Give the classification of hydraulic press. **03**
- Q.5 (b)** Differentiate the hydraulic press and mechanical press. **04**
- Q.5 (c)** Discuss in detail about the advantages of injection moulding process. **07**
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