

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV(New) • EXAMINATION – WINTER 2016

Subject Code:2142603

Date:24/11/2016

Subject Name: Rubber engineering

Time:02:30 PM to 05:00 PM

Total Marks: 70

Instructions:

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

- Q.1 Answer the following 14**
1. Define the term 'Mastication'.
 2. What do you mean by Mixing?
 3. Write down any two applications of Farrel Continuous Mixer (FCM).
 4. Write down the major function of head of extruder.
 5. Give any one difference between cold feed extruder and hot feed extruder.
 6. List out any two operations carried out by calendar.
 7. Mention any two machine related problems which affect efficiency of calendering process.
 8. What do you mean by blooming?
 9. Which are the major components of the mould?
 10. Give any two examples of rubber products which can be prepared by moulding.
 11. Define the term 'platen'.
 12. Write down the use of mould releasing agent in the rubber industry.
 13. List out the typical method of guarding in case of mixing mill.
 14. How flash removal operation of vulcanizate is carried out by machine trimming?
- Q.2 (a) Write down the characteristics of under masticated rubber. 03**
- Q.2 (b) Explain the given features with respect to internal mixer:(i) Ram Pressure (ii) Rotor Speed 04**
- Q.2 (c) Discuss in detail about the construction and working of Mixing Mill. 07**
- OR**
- Q.2 (c) Discuss in detail about the advantages and disadvantages of Mixing Mill. 07**
- Q.3 (a) What are the remedies to avoid cured lump problems in extruder head? 03**
- Q.3 (b) Write down the key features of ram extruder. 04**
- Q.3 (c) Discuss in detail about the problems associated with calendering process. 07**
- OR**
- Q.3 (a) How the screw speed and die opening affect the output of extruder? 03**
- Q.3 (b) Write down the key features of ram extruder. 04**
- Q.3 (c) Discuss in detail about the roll temperature control in case of calendering process. 07**
- Q.4 (a) Write a brief note on prototype mould. 03**
- Q.4 (b) Explain the reasons and remedies for under cure. 04**
- Q.4 (c) Discuss in detail about the advantages and disadvantages of compression moulding process. 07**

OR

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- Q.4 (a)** Write a brief note on hand mould. **03**
Q.4 (b) Explain the reasons and remedies for over cure. **04**
Q.4 (c) Discuss the advantages and disadvantages of transfer moulding process. **07**

- Q.5 (a)** List out the major components of press. **03**
Q.5 (b) Explain the construction of Bag-O- Matic Press. **04**
Q.5 (c) Discuss in detail about the types of injection moulding process. **07**

OR

- Q.5 (a)** Explain the term hydraulic power pack with respect to press. **03**
Q.5 (b) Differentiate the hydraulic press and mechanical press. **04**
Q.5 (c) Discuss in detail about the types of injection units used in injection moulding machine. **07**
