

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

# GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. Sem. – IV - Examination – June- 2011

Subject code: 142603

Subject Name: Rubber Engineering

Date: 10/06/2011

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.
4. Assume suitable data wherever necessary.

- Q. 1**
- (a) Answer the following
- (i) Mention the compound related difficulties to achieve accuracy in calendering. **02**
- (ii) Write in brief about the peripherally drilled rolls. **02**
- (b) Answer the following
- (i) Write a short note on B-ray scanning device. **06**
- (ii) Explain the main sources of potential danger, typical causes of accident and method of guarding for mixing mill and internal mixer respectively. **04**
- Q. 2**
- (a) Explain the theory of mastication. Also mention the characteristics of undermasticated rubber and overmasticated rubber respectively. **06**
- (b) Answer the following
- (i) Write a short note on tandem mixing. **05**
- (ii) Write in brief about the rotors of internal mixer. **03**
- OR**
- (b) Answer the following
- (i) Give the advantages of internal mixer over mixing mill. **04**
- (ii) Explain classification of mixing mill **04**
- Q. 3**
- (a) Answer the following
- (i) Write a short note on duplex extruder. **05**
- (ii) Describe the following feature with respect to extruder: (i) Extruder Size (ii) Extruder output (ii) L/D ratio **05**
- (b) How is flash removal carried out by low temperature tumbling? **04**
- OR**
- Q. 3**
- (a) Discuss in detail about the various extrusion problems. **08**
- (b) Answer the following
- (i) What do you mean by extruder chocking? How is it overcome? **02**
- (ii) How flash removal is carried out by punching and hand trimming? **04**
- Q. 4**
- (a) Answer the following
- (i) Give the classification of compression mould. Explain any two. **05**
- (ii) Explain the factors affecting moulding. **05**
- (b) Answer the following
- (i) How is rubber injection moulding differs from plastic injection moulding? **02**
- (ii) How plasticizing action is controlled in injection moulding machine. **02**

**OR**

- Q. 4 (a)** Answer the following
- (i)** Write down the advantages and disadvantages of compression moulding. **04**
  - (ii)** Draw labeled diagram of pot transfer moulding. **04**
- (b)** Answer the following
- (i)** Explain the injection moulding process. Which products can be prepared by injection moulding process? **04**
  - (ii)** Which characteristic features are necessary in choice of clamping unit? **02**
- Q. 5 (a)** Discuss in detail about the major components of press. **08**
- (b)** Answer the following
- (i)** Write down the causes and remedies of sponging. **02**
  - (ii)** Write a short note on planetary mixer **04**
- OR**
- Q. 5 (a)** Discuss in detail about the classification of hydraulic press. **06**
- (b)** Answer the following
- (i)** Describe the causes and remedies of backrinding. **04**
  - (ii)** Write a short note on ball mill. **04**

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