

GUJARAT TECHNOLOGICAL UNIVERSITY
B. E. - SEMESTER – VII • EXAMINATION – WINTER 2012

Subject code: 172603**Date: 01/01/2013****Subject Name: Rubber Plant and Process Engineering****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** (a) Write the effect of following chemicals on human health: **07**
(i) Benzidine (ii) Acrylonitrile (iii) Talc (iv) Ester plasticizer (v) TMTD (vi) Sulphur (vii) Methanol
- (b) Define the term “toxicity”. Explain chronic toxicity and acute toxicity in detail with examples. **07**
- Q.2** (a) Discuss the health hazard from most commonly used filler in rubber industry. **07**
- (b) Define the terms: Pollution and Pollutant. Write the damages caused by the pollution on the natural functioning of biosphere. **07**
- OR**
- (b) List different types of pollution in rubber industry. Explain any two in detail. **07**
- Q.3** (a) Discuss fundamental criteria for Engineers. **07**
- (b) Write a note on personal protective equipments. **07**
- OR**
- Q.3** (a) Describe various components of safety program. **07**
- (b) Name the methods to prevent fires and explosion in industry. Explain any two in detail. **07**
- Q.4** (a) Discuss on Good housekeeping and its advantages. **07**
- (b) Describe in brief management philosophies: Just In Time, Right First Time and Total Quality Management. **07**
- OR**
- Q.4** (a) Explain different forms of plant maintenance. **07**
- (b) Write the benefits of motion economy. **07**
- Q.5** (a) Why plant layout is required? Explain any three reasons in detail. **08**
- (b) Draw the plant layout diagram for O-ring manufacturing unit. **06**
- OR**
- Q.5** (a) Discuss the specific factors affecting plant site location. **07**

(b) The annual data for Amazon Ltd. is given below.

07

S.No.	Particulars	Amount Rs.
1.	Sales 1,50,000 units at Rs. 200/- each	
2.	Raw material cost	90,00,000
3.	Utility cost	25,00,000
4.	Labour cost (daily wages)	9,00,000
5.	Salaries	20,00,000
6.	Administrative expenses	5,00,000
7.	Rent, Insurance	2,00,000

Calculate variable cost, fixed cost, contribution and break even point as percent installed capacity.
