



Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER VII(OLD) • EXAMINATION – WINTER 2017

Subject Code: 170503**Date: 10/11 /2017****Subject Name: Plant Design and Project 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: **07**
- 1 Explain the role of a cost engineer. **1**
 - 2 Explain six tenths factor rule. **1**
 - 3 What is 'capitalized engineering'? **1**
 - 4 What are scale models? **1**
 - 5 What is salvage value? **1**
 - 6 What is a preliminary or quick estimate design? **1**
 - 7 Explain 'pyrolysis' as a solid waste disposal option. **1**
- (b) Discuss the factors to be considered for ideally locating a fertilizer industry in Gujarat. **07**
- Q.2** (a) Sketch plant layout of any (Chemical) industry that you have visited. As a chemical engineer, justify the same. **07**
- (b) Discuss in detail design information from literature. **07**
- OR**
- (b) Discuss types of flow diagrams in detail. **07**
- Q.3** (a) Discuss community factors and their significance in plant location **07**
- (b) Discuss selection criteria of size reduction equipments **07**
- OR**
- Q.3** (a) Write the specification sheet for a heat exchanger. **07**
- (b) Discuss noise pollution and control in industry. **07**
- Q.4** (a) Discuss causes of depreciation. Explain in brief (i) Straight-line method and (ii) Sinking Fund method for calculating depreciation. **07**
- (b) What is optimum design? Explain "breakeven chart" for production schedule and its significance for optimum analysis. **07**
- OR**
- Q.4** (a) List cost indices. Discuss any two in detail. **07**
- (b) What is single unit and group depreciation? Evaluate depreciation methods. **07**
- Q.5** (a) What is replacement? Discuss profitability evaluation for the same. **07**
- (b) What is a pilot plant? Discuss the subsequent development stages of semi-commercial/commercial production **07**
- OR**
- Q.5** (a) Compare and contrast PERT and CPM Project management techniques. **07**
- (b) In comparison of different processes, explain (i) 'Technical factors' and (ii) 'Time factor' **07**



Marking Scheme

Q	Description	Marks
Q.1	(a) Answer the following:	07
	1 Explain the role of a cost engineer.	1
	2 Explain six tenths factor rule.	1
	3 What is 'capitalized engineering'?	1
	4 What are scale models?	1
	5 What is salvage value?	1
	6 What is a preliminary or quick estimate design?	1
	7 Explain 'pyrolysis' as a solid waste disposal option.	1
	(b) Discuss the factors to be considered for ideally locating a fertilizer industry in Gujarat.	07
Q.2	(a) Sketch plant layout of any (Chemical) industry that you have visited. As a chemical engineer, justify the same.	02+05
	(b) Discuss in detail design information from literature.	07
	OR	
	(b) Discuss types of flow diagrams in detail.	07
Q.3	(a) Discuss community factors and their significance in plant location	04+03
	(b) Discuss selection criteria of size reduction equipments	07
	OR	
Q.3	(a) Write the specification sheet for a heat exchanger.	07
	(b) Discuss noise pollution and control in industry.	03+04
Q.4	(a) Discuss causes of depreciation. Explain in brief (i) Straight-line method and (ii) Sinking Fund method for calculating depreciation.	03+02+02
	(b) What is optimum design? Explain "breakeven chart" for production schedule and its significance for optimum analysis.	02+03+02
	OR	
Q.4	(a) List cost indices. Discuss any two in detail.	03+04
	(b) What is single unit and group depreciation? Evaluate depreciation methods.	04+03
Q.5	(a) What is replacement? Discuss profitability evaluation for the same.	03+04
	(b) What is a pilot plant? Discuss the subsequent development stages of semi-commercial/commercial production	02+05
	OR	
Q.5	(a) Compare and contrast PERT and CPM Project management techniques.	07
	(b) In comparison of different processes, explain (i) 'Technical factors' and (ii) 'Time factor'	04+03

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