PITHAPUR RAJAH'S GOVERNMENT COLLEGE(A), KAKINADA.

II B.SC, PETROCHEMICALS

MODEL QUESTIONPAPER

PAPER – III – INTRODUCTION TO CHEMICAL ENGINEERING

Time: 2 Hrs. **Max. Marks 50**

PART-I

Answer any THREE questions by attempting at least ONE question from each section.

Each Question carries **TEN** marks. 3X10=30M

SECTION – A

1. a. Write in detail bout Unit Operations. BT Level-1
   b. State and explain Clausius Clapeyron equation. BT Level-1
2. Describe the key steps involved in applying the method of least squares to analyze experimental data. BT Level-1
3. a. Analyze the key steps to be followed in material balance calculations. BT Level-2
   b. Evaluate different methods for the removal of water hardness. BT Level-2

SECTION – B

4. a. Describe the determination of coefficient of viscosity by Ostwald Viscometer. BT Level-1
   b. Explain about hydrostatic balance. BT Level-1
5. Demonstrate the Continues Flow reactor and Batch reactor. BT Level-2
6. a. Recall the formula for the Gibbs Phase Rule and explain its components. BT Level-1
   b. Outline the steps involved in constructing a Cox Chart. BT Level-1

PART-III

Answer any **FOUR** Questions from the following.

Each Question carries **FIVE** marks. 4 x 5 =20M

7. Contrast Amagat's Law with the ideal gas law. BT Level-2
8. Write a note on graphical integration. BT Level-1
9. Formulate the Concept of Osmosis. BT Level-4
10. Define the terms Density and Specific gravity. BT Level-1
11. Generalize the different types of Chemical Reactors. BT Level-4
12. Explain about Buckingham method. BT Level-1
13. Describe the determination of Specific gravity by Hydrometer. BT Level-1

S.No	Course Content	Long Answer	Short Answer	Total marks	As per Blooms Taxonomy
1	Unit operations-I	2	1	25	BT Level-1 & BT Level-2
2	Unit operations-II	1	2	20	BT Level-1
3	Physio-chemical calculations	1	1	15	BT Level-2 & BT Level-4
4	Measuring devices	1	2	20	BT Level-1
5	Flow meters & chemical reactors	1	1	15	BT Level-2 & BT Level-4
	TOTAL	**6**	**7**	**95**	

BT Level-1

Remembering

Understanding

BT Level-2

Analysis

Application

BT Level-3

Innovation

BT Level-4

Creativity