

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, April/May 2018

Course: Chemical Technology
Program: B. Tech CE+RP
Time: 03 hrs.

Semester: IV

Max. Marks: 100

Instructions: Answer all the questions of a section at one place and in order. Write legibly.

SECTION A (20 Marks)

S. No.		Marks	CO
Q 1	What is Portland cement and mention its composition?	04	CO1
Q 2	Differentiate between Solvay process and Modified Solvay process.	04	CO2
Q 3	Write short notes on classification of plant nutrients.	04	CO3
Q 4	Explain the working of filter aids used during vegetable oil extraction.	04	CO4
Q 5	What are the various types of catalysts used for olefin polymerization?	04	CO5

SECTION B (40 Marks)

Q 6	Explain the production process of Sulfur from its ore.	08	CO1
Q 7	Describe the manufacture of sodium bicarbonate with the help of a neat flowsheet.	08	CO2
Q 8	Discuss the production process of one of the nitrogen fertilizers mentioned below, with the help of a neat flowsheet - Nitric acid by Ostwald process (Or) Urea	08	CO3
Q 9	What is the significance of hydrogenation of oils? Explain the process of hydrogenation of oil.	08	CO4
Q 10	Explain the synthesis of formaldehyde from methanol. (Or) Write notes on the classification of polymers based on preparation methods, physico-chemical structures and physical properties.	08	CO5

SECTION-C (40 Marks)

Q 11	(i) Describe the process of preparation of wood pulp by sulfate process, with a neat flowsheet. (ii) Discuss the manufacturing process of glycerin.	(14 + 6)	CO4
Q 12	Explain the synthesis of phenol from toluene oxidation in detail with the help of a neat flowsheet. (Or) Explain the process of steam cracking of hydrocarbons in detail that produces ethylene and acetylene, with the help of a flowsheet.	20	CO5