

Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2019

Course: Petrochemical Process Technology

Semester: VII

Program: B. Tech. CE+RP

Time 03 hrs.

Course Code: CHEG432

Max. Marks: 100

Instructions: Answer all the questions of a section, in sequence. Write legibly.

SECTION A (4 x 5 = 20 Marks)

S. No.	Question	Marks	CO
Q 1	What are first, second and third generation petrochemicals? Give examples.	5	CO1
Q 2	Differentiate the mechanism of free radical addition polymerization from ionic polymerization mechanism.	5	CO2
Q 3	Write short notes on the production of SBR.	5	CO4
Q 4	What is the significance of integration of petrochemical plant with refineries?	5	CO5

SECTION B (4 x 10 = 40 Marks)

Q 5	What is steam reforming? Discuss its kinetics and derive rate expression for steam reforming.	2+8	CO2
Q 6	Describe the production process of ammonia from syngas.	10	CO3
Q 7	Explain the manufacturing process of Acrylonitrile butadiene styrene (ABS) with the help of a neat diagram.	10	CO4
Q 8	Describe the production process of nitric acid, with the help of a neat flowsheet. Or Describe the Solvay process of manufacturing soda ash, in detail.	10	CO5

SECTION-C (2 x 20 = 40 Marks)

Q 9	Explain the production process of any two of the following, with the help of a neat flowsheet. a) Acetic acid (from Methanol) b) Adiponitrile c) Styrene	10+10	CO3
Q 10	a) With the help of a neat flowsheet, describe the synthesis of polyethylene terephthalate (PET). b) What is Nylon – 6,6? Explain its production process with a neat flowsheet.	10 2 + 8	CO4