

Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
Online End Semester Examination, May 2021

Course: Organic Chemistry III
Program: B.Sc. Chemistry (H)
Course Code: CHEM 2005

Semester: IV
Time 03 hrs.
Max. Marks: 100

SECTION A

1. Each Question will carry 5 Marks

2. Instruction: Complete the statement / Select the correct answer(s)

S. No.	Questions	CO
Q 1	Write five examples of primary metabolites -----, -----, -----, -----, -----	CO3
Q 2 a.	Name the alkaloid showing anti-convulsant activity -----	CO3
b.	Alkaloid used for snake-bite -----	
c.	The formula of tri-terpenoid is-----.	
d.	Number of carbon atom in carotenoid is -----	
e.	Name the two common food with nicotine content -----, -----	
Q 3 a.	Difference between terpenes and terpenoid----- .	CO3
b.	Write the three step of Isolation of alkaloid -----, -----, -----	
Q4	Fill in the blanks: a. An example of polynuclear hydrocarbon containing two benzene rings fused with each other is	CO1
b.	An example of polynuclear hydrocarbon containing three benzene rings fused with each other in straight line is	
c.	Furan contains as hetero atom in its structure.	
d.	Pyridine is an example of membered heterocyclic compound.	
e.	Compounds containing two or more than two benzene rings are known as	
Q5	State whether following statements are true or false: a. Pyridine is an example of aromatic compound. b. Thiophene contains oxygen in its structure. c. Molecular formula of phenanthrene is C ₁₀ H ₁₆ . d. Indole is a bicyclic compound.	CO1

e.	Aromatic compounds may contain $(4n+2)\pi$ or $4n\pi$ electrons.	
Q6	Choose the correct option: a. Reaction of benzene and phthalic anhydride produces: i. Naphthalene ii. Phenanthrene iii. Anthracene iv. Pyrrole b. Quinoline on nitration produces: i. 5-nitroquinoline and 8-nitroquinoline ii. 4-nitroquinoline and 6-nitroquinoline iii. 5-nitroquinoline and 6-nitroquinoline iv. 4-nitroquinoline and 8-nitroquinoline	CO1

SECTION B

1. Each question will carry 10 marks

2. Instruction: Write short / brief notes

Q 1 a.	Discuss the special isoprene rule with suitable example.	CO3
b.	Explain the Emde degradation method for alkaloid.	
Q 2	Discuss the structure elucidation of nicotine.	CO3
Q 3	Discuss about aromaticity of the following compounds: Pyridine, piperidine, furan, phenanthrene	CO1
Q4	Explain the orienting influencing of groups in naphthalene both in case of mono- and di-substitution with examples.	CO1
Q5	Carry out following conversions: a. Pyrrole to pyridine b. Thiophene to butane c. Aniline to quinoline d. Isoquinoline to phthalimide	CO1

SECTION-C

1. Each Question carries 20 Marks.

2. Instruction: Write long answer.

Q 1 a.	What is Hinsberg reagent and discuss its preparation and pathways.	CO2
b.	Explain the primary, secondary and tertiary structure of proteins.	
OR		
	Discuss the following reaction: a. The Schiemann reaction b. Gabriel phthalamide reaction c. Action of nitrous acid on primary, secondary and tertiary amine. d. Isocyanide test	