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| Name: |  |
| Enrolment No: | |

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

Online End Semester Examination, May 2021

Course: Terpenoids steroids/alkaloids and polyphenols

Semester: IV

Program: M.Sc. Chemistry (H)

Time 03 hrs.

Course Code: CHEM 8022

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 three examples of secondary metabolites -----, -----, -----, | CO1 |
| Q 2 a. | Isoprene rule is not followed in which terpenoid ----- | CO1 |
| b. | Alkaloid used for snake-bite ----- | |
| c. | The formula of sesque-terpenoid is-----. | |
| d. | Alkyl amine referred to as ----- | |
| e. | Example of analgesic alkaloid----- | |
| Q 3 a. | Difference between terpenes and terpenoids ----- . | CO1 |
| b. | Write the three step of Isolation of alkaloid -----, -----, ----- | |
| Q4 a. | Write three name of the classification of alkaloids-----,-----,----- | CO1 |
| b. | Two important characteristics of terpenoid-----, ----- | |
| Q5 | Classify the pigments on the basis of structural unit. | CO1 |
| Q6 | Write few examples of flavones and flavanols. | CO1 |

SECTION B

1. Each question will carry 10 marks

2. Instruction: Write short / brief notes

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| Q 1 a. | Discuss the special isoprene rule with suitable example. | CO1 |
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| b. | Explain briefly Staas-Otto method for the isolation of alkaloid. | |
| Q 2 | Discuss the synthesis of morphine. | CO2 |
| Q 3 | Differentiate between | |
| a. | Primary and secondary metabolite. | CO1 |
| b. | Terpenes and Terpenoid | |
| Q4 | Discuss the Mevalonic acid pathway for the biosynthesis of terpenoid. | CO2 |
| Q5 a. | Write all steps for the synthesis of ergatamine. | CO2 |
| b. | Discuss all six points that explain the structure of cholesterol. | |
| SECTION-C | | |
| 1. Each Question carries 20 Marks. | | |
| 2. Instruction: Write long answer. | | |
| Q 1 a. | Discuss the Shikimic acid pathway for the biosynthesis of flavanoids. | |
| b. | Define the synthesis of Quercetin. | |
| OR | | |
| Conversions: | | |
| a. | Squalene to Cholesterol. | CO2 |
| b. | Progesterone to testosterone. | |
| c. | Glyceraldehyde 3-phosphate to MEP. | |
| d. | α -amino acids to alkaloids | |