



TAMIL NADU OPEN UNIVERSITY

Chennai - 15

School of Sciences

Department of Chemistry

HOME / SPOT ASSIGNMENT

Programme Code No : 282

Programme Name : M.Sc. Chemistry

Course Code & Name : MCHE - 21 & Organic Chemistry - II

Batch : AY 2018-19 [2nd Year]

No. of Assignments : 3 [One Assignment for each 2 credits]

Maximum CIA Marks : 25 [Average of total no. of Assignments]

ASSIGNMENT-1

Max: 25 marks

Answer ANY ONE of the question not exceeding 1000 words

1) Discuss about the following rearrangement reactions with examples.

- (i) Wagner-Meerwein
- (ii) Baeyer-Villiger
- (iii) Lossen
- (iv) Beckmann
- (v) Fries

2) Write the notes on the following reactions with suitable examples.

- (i) Photoaddition
- (ii) Photooxidation
- (iii) Photoreduction
- (iv) Photodimerization

3) Explain about the nomenclature of organic compounds.

ASSIGNMENT-2

Max: 25 marks

Answer ANY ONE of the question not exceeding 1000 words

- 1) Explain about the classification of Pericyclic reactions with examples.
- 2) Discuss in details about the following reactions.
 - (i) Norish type I and II
 - (ii) Paterno-Buchi
 - (iii) Barton
 - (iv) Wolff rearrangement
 - (v) Di- π methane rearrangement
- 3) Describe about the Biosynthesis of following molecules
 - (i) Camphor
 - (ii) Menthol
 - (iii) Nicotine
 - (iv) Camptothecin

ASSIGNMENT-3

Max: 25 marks

Answer ANY ONE of the question not exceeding 1000 words

- 1) Describe about the principle and concepts involved in NMR spectroscopy.
- 2) Explain about the synthesis and reactivity of following molecules.
 - (i) Indole
 - (ii) Pyridine
 - (iii) Thiazole
 - (iv) Imidazole
 - (v) Quinoline
- 3) What are the basic concepts involved in Photochemistry?



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Programme Code No : 282

Programme Name : M.Sc. Chemistry

Course Code & Name : MCHE - 22 & Inorganic Chemistry - II

Batch : AY 2018-19 [2nd Year]

No. of Assignments : 3 [One Assignment for each 2 credits]

Maximum CIA Marks : 25 [Average of total no. of Assignments]

ASSIGNMENT-1

Max: 25 marks

Answer ANY ONE of the question not exceeding 1000 words

1) Describe about the basics and principles of the following spectroscopies.

- (i) UV-Vis
- (ii) IR
- (iii) Raman

2) Write the notes on the following reactions with suitable examples.

- (i) Protonation
- (ii) Carbonylation
- (iii) Decarboxylation
- (iv) Polymerization

3) Write about the reactions in liq. NH_3 , H_2SO_4 , CH_3COOH , anhydrous HF , N_2O_4 and SO_2 .

ASSIGNMENT-2

Max: 25 marks

Answer ANY ONE of the question not exceeding 1000 words

1) Discuss in details about the following with suitable examples.

- (i) Types of nuclear forces
- (ii) Liquid drop model of nucleus
- (iii) Shell model of nucleus

2) Describe about the following reactions with suitable examples.

- (i) Aquation
- (ii) Anation
- (iii) Acid hydrolysis
- (iv) Base hydrolysis
- (v) Ligand displacement

3) Write the notes on the following salts.

- (i) Rock salt
- (ii) Calcium chloride
- (iii) Wurtzite
- (iv) Zinc blende
- (v) Rutile
- (vi) Fluorite

ASSIGNMENT-3

Max: 25 marks

Answer ANY ONE of the question not exceeding 1000 words

1) Describe the following with suitable examples.

- (i) ^{31}P NMR
- (ii) ^{19}F NMR
- (iii) Shift reagents
- (iv) Koopman's theorem

2) Explain about the following.

- (i) Nuclear fission
- (ii) Nuclear fusion
- (iii) Stellar energy
- (iv) Hot atom chemistry

3) Give the short notes for the following

- (i) Labile and Inert complexes
- (ii) Isomerisation and Racemisation
- (iii) Conjugate base mechanism
- (iv) Trans effect



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Programme Code No : 282

Programme Name : M.Sc. Chemistry

Course Code & Name : MCHE - 23 & Physical Chemistry - II

Batch : AY 2018-19 [2nd Year]

No. of Assignments : 3 [One Assignment for each 2 credits]

Maximum CIA Marks : 25 [Average of total no. of Assignments]

ASSIGNMENT-1

Max: 25 marks

Answer ANY ONE of the question not exceeding 1000 words

1) Discuss about the following distributions.

- (i) Boltzmann
- (ii) Bose-Einstein
- (iii) Fermi-Dirac

2) Write the notes on the following Adsorption isotherms.

- (i) Freundlich
- (ii) Langmuir
- (iii) BET

3) Explain about the construction of character tables for C_{2v} and C_{3v} point groups.

ASSIGNMENT-2

Max: 25 marks

Answer ANY ONE of the question not exceeding 1000 words

- 1) Write the notes on the following.
 - (i) Quantum yield
 - (ii) Photosensitization
 - (iii) Green house effect
 - (iv) Lasers
 - (v) Chemiluminescence

- 2) Discuss in details about the following reactions with suitable examples.
 - (i) Chain reactions
 - (ii) Chain branching explosion reactions

- 3) Describe about the following surface reaction mechanisms.
 - (i) Unimolecular
 - (ii) Bimolecular
 - (iii) Langmuir-Hinshelwood
 - (iv) Eley-Rideal

ASSIGNMENT-3

Max: 25 marks

Answer ANY ONE of the question not exceeding 1000 words

- 1) Describe the following.
 - (i) Onsager's law
 - (ii) Linear response theory
 - (iii) Chemical equilibrium
 - (iv) Reversible/Irreversible processes

- 2) Explain the following reactions with suitable examples.
 - (i) Michaelis-Menten mechanism of enzyme catalysis
 - (ii) Mechanism of enzyme inhibition
 - (iii) Catalytic efficiency of enzymes

3) Discuss about the following symmetries.

- (i) Centre of symmetry
- (ii) Plane of symmetry
- (iii) Proper axis of symmetry
- (iv) Improper axis of symmetry

Important Instructions

1. Date of Publication : 07.01.2020
2. Last date of submission of answer script by the student to the study centre /LSC : 05.04.2020
3. Last date of submission of marks by the examiner to the study centre/LSC : 12.04.2020
4. Last date of submission of marks by the study centre/LSCs to the office of C.O.E. on or before : 25.04.2020