

(POCH 402)
M.Sc(Chemistry) P.G Examinations-July 2022
SEMESTER-IV
GREEN CHEMISTRY

TIME: 3Hrs

MaxMarks:60

PART- A

I. Answer any 5 questions of the following questions

5X4=20

1. Explain the fundamental principle of Green Chemistry?
2. Define green chemistry and risk hazard?
3. Explain prevention of hazardous products?
4. Explain use of protecting groups?
5. Explain the advantages of use of water as solvent?
6. Explain the structure and applications of crown ethers?
7. Write a note on reactions on solid mineral supports?
8. Give a note on Strecker's reaction?
9. Briefly write about alkoxy carbonylation of ionic liquids?
10. Write about the selection of ionic liquids?

PART- B

Answer the following Questions

5X8=40

(1 a). Explain impact of chemistry on environment?

(OR)

b). Discuss the tools of green chemistry?

(2 a). How to prevent waste and by products green chemically?

(OR)

b). Explain selection of appropriate solvents and starting materials?

(3 a). Write about microwave organic synthesis applications?

(OR)

(OR)

- b) Discuss the advantages and applications phase transfer catalyst?
- 14 a) Discuss about ultrasound assisted green syntheses of reduction and polymerization?

(OR)

b) write short notes on a. Witing reaction

b. Darzen's reaction

- 15 a) Discuss different types of ionic liquids?

(OR)

b) Explain hydrogenation and oxidation of ionic liquids?

✓ ✓ ✓ ✓ ✓

Regd.No: _____

(POCH 403)

M.Sc(Chemistry) P.G Examinations-July 2022

SEMESTER-IV

CHEMISTRY OF BIO-ORGANIC COMPOUNDS

TIME: 3Hrs

MaxMarks:60

PART- A

1. Answer any 5 questions of the following questions

5X4=20

1. Explain the ring structure of Fructose?
2. Explain the nomenclature and classification of carbohydrates?
3. What is meant by peptides and write its classification?
4. Write the general properties of amino acids?
5. Give the structural elucidation of vitamin-B₁?
6. Write the synthesis of vitamin-C?
7. Explain the functions of RNA and DNA?
8. Write a note on nucleotides?
9. What are synthetic polymers give examples?
10. Write differences between biopolymers and synthetic polymers?

PART- B

Answer the following Questions

5X8=40

(10). Write a detailed note on structure and stereo chemistry of glucose?

(OR)

10. Explain a. Mutarotation

b. Anomeric effect?

(10). Write the classification and properties of proteins?

(OR)

10. Write the classification of amino acids?

24
13 a). Define vitamins write the classification of vitamins?

(OR)

b). Give the structural elucidation, stereochemistry and synthesis of vitamin-B₁?

14 a). Give a detailed note on structure of DNA?

(OR)

b). Explain mutations and reactions of nucleic acid bases?

15 a). Define bio polymers? Write about types of biopolymers and its properties?

(OR)

b). Write about the applications of biopolymers and synthetic polymers?

X X X X

(POCH 401)
M.Sc(Chemistry) P.G Examinations-July 2022
SEMESTER-IV
MOOCS- ANALYTICAL TECHNIQUES

TIME: 3Hrs

MaxMarks:60

- I. Answers any 5 Questions out of the 10 short answer Questions.
5×4=20M

- 1.Explain the pH metry?
- 2.Discuss aqueous solution with units of concentration?
- 3.Explain density and gradient centrifugation?
- 4.explain applications of gel fractionation?
- 5.Explain protein Estimation techniques?
- 6.Explain Affinity chromatography?
- 7.Explain gas chromatography?
- 8.Explain light microscopy?
9. Explain flow cytometry?
10. Explain SDS page?

- II. Answer the following Questions

5×8=40M

- 11 a) .Explain UV absorption spectroscopy?
Or

- b) Explain colorimetry?

- 12 a) .. Explain principal of centrifugation?
(OR)

- b) Explain methodology of Gel fractionation?

- 13 a) . Explain planar chromatography and it's applications?
Or

- b) Explain in exchange chromatography?

- 14 a) . Explain HPLC and it's applications? (OR)

- (b) . Explain Fluorescence?

- 15 a) Explain principle of IHC. (OR)

- b) Explain Flow cytometry and it's applications?

— o —

Regd.No: _____

(POCH 404)
M.Sc(Chemistry) P.G Examinations-July 2022
SEMESTER-IV
ORGANO METALLIC REAGENTS

Max Marks: 60

TIME: 3 Hrs

PART- A

5X4=20

1. Answer any 5 questions of the following questions

1. Write any two preparation methods for LDA?
2. Describe the alkylation reaction by using Grignard reagent with esters, acids and CO_2 ?
3. Give any four synthetic application of Gilman's reagent?
4. Write short notes on organo tin compounds?
5. Explain Sonogashira coupling reaction?
6. How to prepare organo platinum compound?
7. Give note on structure and synthesis of 9-BBN and Disiamylboranes?
8. Explain the functional group transformation of organoboranes?
9. Write the synthesis and synthetic application of silylenol ethers?
10. What is Peterson olefination, elaborate?

PART- B

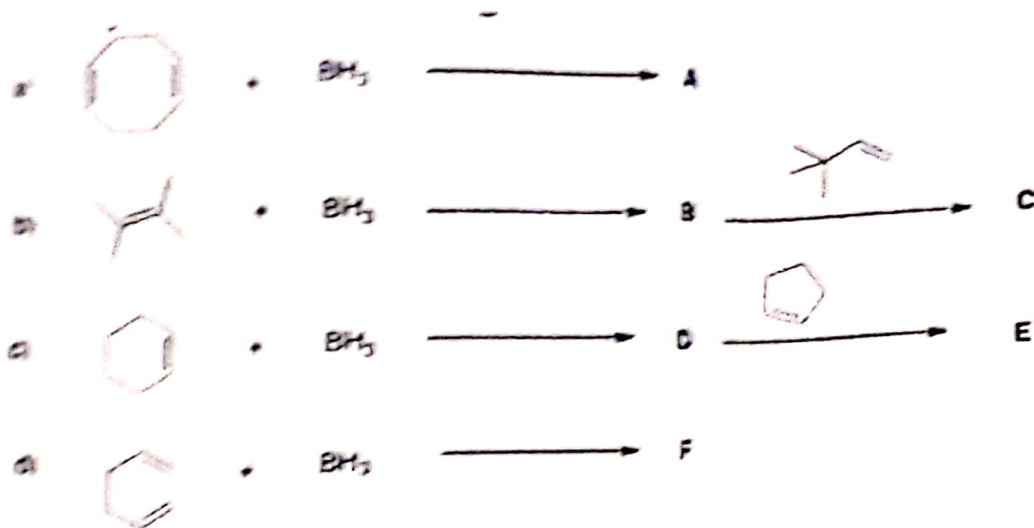
5X8=40

Answer the following Questions

- 11 a) Write any four synthetic applications of Grignard reagent with mechanism? (4R)
b) Give any four synthetic applications of LDA with mechanism?
- 12 a) How to prepare organo zinc compounds and explain its applications? (4R)
(6) Explain the preparation of π -allyl nickel complexes and nickel carbonyls? Write any two applications of each?
- 13 a) Write a note on a. Suzuki coupling
b. Heck coupling? (2R)

b). Describe the preparation of π - allyl palladium complexes and organo platinum complexes?
 (4 a). Explain the reaction of organo boranes with α -Bromo ketone and α -Bromo esters? (2)

b). Complete the following reactions



(5 a) Give any three synthetic applications of trimethylsilyl chloride and β -silyl carbonyl compounds? (3)

b) a. how to protect the functional groups by using organo silicon complexes?

b. explain β -effect?

