

Roll No. :

Total No. of Questions : 11]

[Total No. of Printed Pages : 3

BPF-2200

M.Sc. (Final) Examination, 2022

CHEMISTRY

Paper - VIII (A)

(Group-B CH-505)

(Organic Synthesis)

Time : 3 Hours]

[Maximum Marks : 75

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section-B

(Marks : 5 × 5 = 25)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **5** marks.

Section-C

(Marks : 10 × 3 = 30)

Note :- Answer any *three* questions out of five (Answer limit **500** words). Each question carries **10** marks.

Section-A

- (i) Write any *two* methods of preparation of organo-transition metal compounds.
- (ii) Why transition metal alkyls are less stable than main group alkyls ?

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- (iii) What are Metallocenes ? Give suitable examples.
- (iv) Explain oxidation reactions of alkenes.
- (v) Define synthons giving suitable examples.
- (vi) Discuss cyclisation reactions.
- (vii) Give *one* method for synthesis of 6-membered ring.
- (viii) Give application of aliphatic nitro compounds in organic synthesis.
- (ix) Give structural formula of longifolene.
- (x) Write the structure of Juvabione.

Section-B

2. Discuss the applications of organo zinc compounds in organic synthesis.

Or

Discuss the physical and chemical properties of organo lithium compounds.

3. Explain Baeyer-Villiger rearrangement in detail.

Or

Starting from ferrocene, how will you prepare its :

- (a) Dicarboxylic derivative
 - (b) Amine derivative
 - (c) Nitroderivative
4. Discuss in detail the role of disconnection approach in organic synthesis.

Or

Write a note on functional group inter-conversions.

5. Write a note on one group C—C disconnections in carbonyl compounds.

Or

Give methods of preparation of :

- (a) 4-membered ring (2 methods)
- (b) 5-membered ring (2 methods)

6. Outline the synthesis of Aphidicolin.

Or

Describe the synthesis of Camphor.

Section-C

7. Write a detailed note on synthesis, properties and applications of organocopper compounds.
8. Write short notes on the following :
- (a) Shapiro reaction
 - (b) Polycyclic aromatic compounds
 - (c) Reduction of hydrocarbons
9. (a) Explain the importance of order of events in organic synthesis.
(b) Describe the principle of protection of alcohols.
10. Discuss in detail two group C—C disconnections in organic synthesis.
11. Describe the complete synthesis of fredericamycin A.