

5. (a) Write the synthesis and reactions of cyclopentadienyl metal carbonyls with six examples.

Or

- (b) Discuss the reactions and synthesis of η^6 -arene-chromium tricarbonyl compounds.

6. (a) Explain dissociation and substitution reactions involving in organometallic catalysts.

Or

- (b) Explain :

(i) Zeigler-Natta polymerisation

(ii) Fischer-Tropsch synthesis.

2019

(January)

Time : 3 hours

Full Marks : 80

Answer from both the Sections as per direction

The figures in the right-hand margin indicate marks

Candidates are required to answer in their own words as far as practicable

(ORGANOMETALLIC CHEMISTRY)

SECTION—A

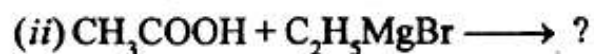
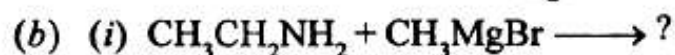
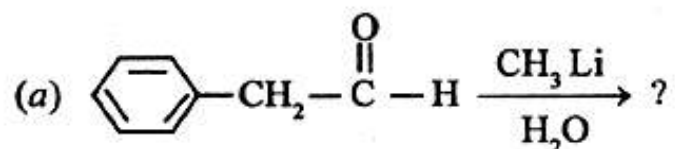
1. Answer any *four* questions : 4 × 4
- (a) Discuss the bonding in aluminium organyls.
- (b) Give two examples of organolithium compounds.
- (c) Explain bonding between transition metal and carbon.

(2)

- (d) Explain synthesis of cyclopentadienyl metalhydrides.
- (e) Write a short note on oxidative addition.
- (f) Explain about Isomerization reaction.

Or

2. Answer all questions : 2 × 8



- (c) Give two examples of metal-carbyne compounds.
- (d) How to form transition metal-carbon π -bond ?
- (e) Give any two examples of arene metal carbonyls.
- (f) Define Hydrogenation.

(3)

- (g) Draw one mechanism of cyclopentadienyl metal carbonyl preparation reaction.
- (h) Explain water gas reaction.

SECTION—B

Answer all questions : 16 × 4

3. (a) Explain synthesis and reactions of organo magnesium compounds.

Or

- (b) Discuss the preparation and reactions of Thallium (I) organyls and organyls of sodium.

4. (a) Explain the reaction of transition metal carbene and transition metal vinylidene compounds with different examples.

Or

- (b) Discuss the reaction involving in transition metal-carbon π -bond with examples.