

**7212**  
**M.Sc. II<sup>nd</sup> SEMESTER EXAMINATION, 2019**  
**CHEMISTRY**  
**Paper – II**  
**Organic Chemistry - II**

Time: Three Hours

Maximum Marks: 80

**PART – A (खण्ड – अ)**

[Marks: 20]

*Answer all questions (50 words each).*

*All questions carry equal marks.*

सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न का उत्तर 50 शब्दों से अधिक न हो।

सभी प्रश्नों के अंक समान हैं।

**PART – B (खण्ड – ब)**

[Marks: 40]

*Answer five questions (250 words each),*

*selecting one from each unit. All questions carry equal marks.*

प्रत्येक इकाई से एक-एक प्रश्न चुनते हुए, कुल पाँच प्रश्न कीजिए।

प्रत्येक प्रश्न का उत्तर 250 शब्दों से अधिक न हो।

सभी प्रश्नों के अंक समान हैं।

**PART – C (खण्ड – स)**

[Marks: 20]

*Answer any two questions (300 words each).*

*All questions carry equal marks.*

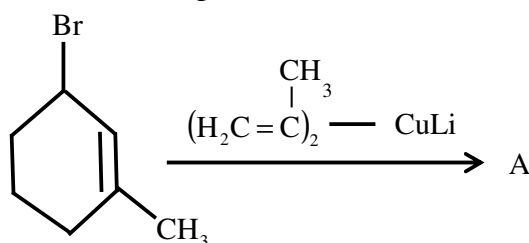
कोई दो प्रश्न कीजिए। प्रत्येक प्रश्न का उत्तर 300 शब्दों से अधिक न हो।

सभी प्रश्नों के अंक समान हैं।

## PART – A

Q.1 Answer all question -

- (1) Define centre of symmetry with example. [2]
- (2) Define Homotopic and Heterotopic faces with example. [2]
- (3) Write three difference between stereo-selective and stereospecific reactions. [2]
- (4) Briefly explain the chiral reagent and give one example. [2]
- (5) Explain migratory aptitude. [2]
- (6) Write Neber rearrangement reaction. [2]
- (7) Explain one use of OsO<sub>4</sub> (Osmium tetra oxide). [2]
- (8) Write product of the following reaction- [2]



- (9) Write reaction for thermal ring opening of cyclobutane. [2]
- (10) Write difference between antarafacial and suprafacial addition. [2]

## PART – B

### UNIT – I

Q.2 Write short note on –

- (a) Optical activity of allenes [4]
- (b) Chirality due to helical shape [4]

Q.3 Explain –

- (a) Bromination of Alkenes with stereochemistry of product. [4]
- (b) Epoxidation of Alkene. [4]

### UNIT – II

Q.4 Explain in detail the conformation of Decalins and effect of conformation on reactivity. [8]

Q.5 Write short note on –

- (a) Asymmetric synthesis [4]
- (b) Cram's and Prelog's rule [4]

### UNIT – III

Q.6 Explain with mechanism – [4+4]

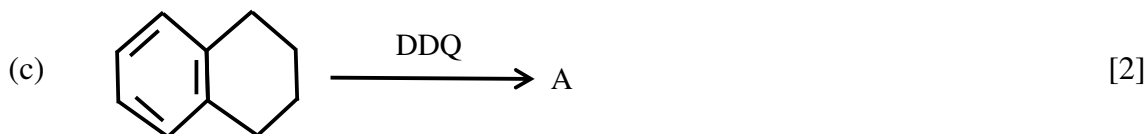
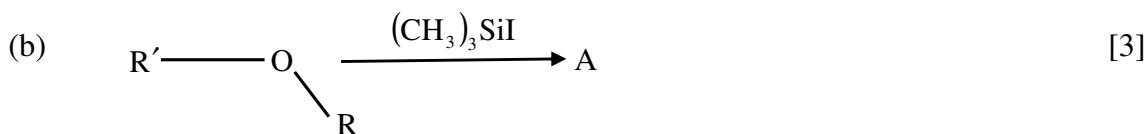
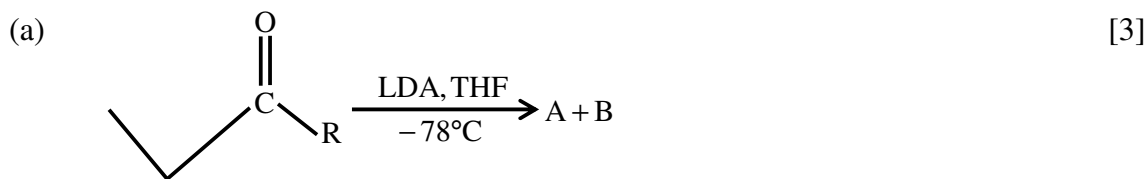
- (a) Favorskii rearrangement
- (b) Lossen rearrangement

Q.7 Explain with mechanism – [4+4]

- (a) Baeyer – Villiger rearrangement
- (b) Demjanov rearrangement

### UNIT – IV

Q.8 Write product of the following reaction -



Q.9 Explain briefly -

- (a) Peterson synthesis [4]
- (b) Use of selenium oxide in organic synthesis [4]

### UNIT – V

Q.10 Write short note in-

- (a) FMO approach to cyclo addition reaction [4]
- (b) Ene reaction [4]

Q.11 Write short note on-

- (a) Claisen rearrangement [4]
- (b) (2+2) addition of ketenes [4]

## PART – C

Q.12 Explain in detail-

(a) Optical purity [5]

(b) RS Nomenclature [5]

Q.13 Explain in detail-

(a) Circular Dichroism (CD) [5]

(b) Optical Rotatory Dispersion (ORD) [5]

Q.14 Write mechanism of the following reaction -

(a) Steven's rearrangement [5]

(b) Wolf rearrangement [5]

Q.15 Explain use of following reagents in organic synthesis-

(a) Tributyltin hydride [5]

(b) DDQ [5]

Q.16 Write product of the following –

