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M.Sc. IInd 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_4 (Osmium tetra oxide). [2]

    (8)   Write product of the following reaction- [2]
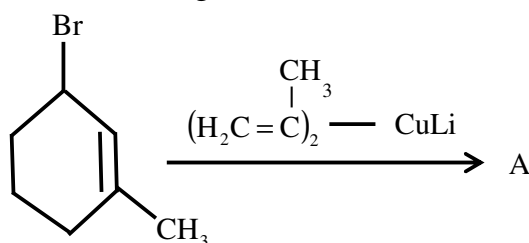
    (9)   Write reaction for thermal ring opening of cyclobutane. [2]

    (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

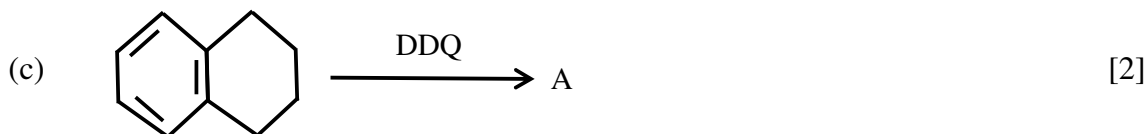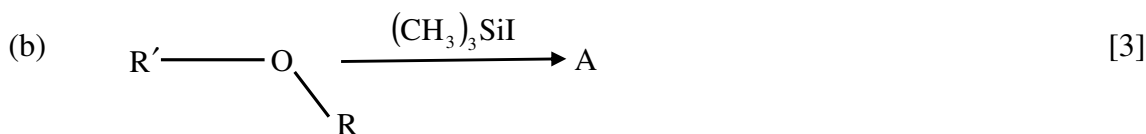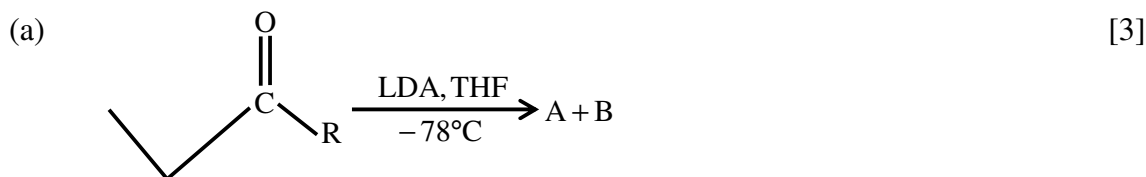Q.6 Explain with mechanism –   [4+4]

    (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 -

    (a)   [3]

    (b)   [3]

    (c)   [2]

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]

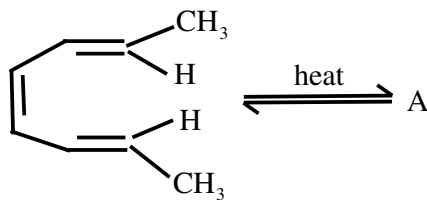Q.15 Explain use of following reagents in organic synthesis-
    (a)   Tributyltin hydride   [5]
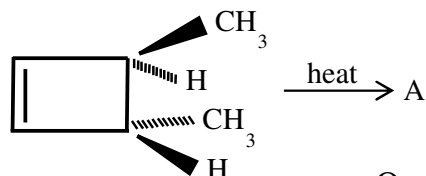   (b)   DDQ   [5]

Q.16 Write product of the following –

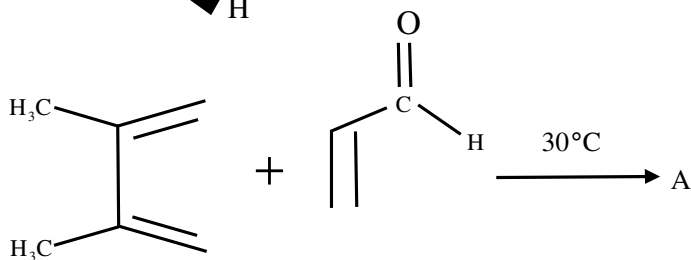(a)   [2½]

(b)   [2½]

(c)   [2½]

(d)   [2½]