

Code No. : 20320 E Sub. Code : AMCH 41

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

Fourth Semester

Chemistry — Core

ORGANIC CHEMISTRY – II

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

- Grignard reagent adds to the carbonyl group of ketone to form
 - primary alcohol
 - secondary alcohol
 - tertiary alcohol
 - aldehyde
- Wolff-Kishner reduction of carbonyl compounds to hydrocarbons involves the treatment of the carbonyl compound in the presence of a strong base, with _____
 - semicarbazide
 - hydroxylamine
 - hydrazine
 - both (a) and (c)
- Lactic acid when heated with iodine and caustic soda gives
 - pyruvic acid
 - iodoform
 - acetaldehyde
 - oxalic acid
- Which of the following is a dicarboxylic acid?
 - phthalic acid
 - benzoic acid
 - acetic acid
 - salicylic acid
- Grignard reagent reacts with ester of formic acids to give
 - primary alcohol
 - secondary alcohol
 - tertiary alcohol
 - aldehyde
- Which one of the following compound is not an organometallic compound?
 - $(C_2H_5)_2Pb$
 - $(CH_3)_3B$
 - CH_3COONa
 - CH_3MgBr
- Which of the following is an active methylene compound?
 - $CH_3COCH_2COCH_3$
 - $CH_3COCH_2COOC_2H_5$
 - $CNCH_2COOC_2H_5$
 - All the above

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- Reaction used to prepare acetoacetic ester from ethyl acetate is known as
 - Michael reaction
 - Cannizzaro reaction
 - Claisen condensation
 - Perkin reaction
- Catalytic hydrogenation of cyclobutane gives
 - but-2-ene
 - butene
 - pentane
 - butane
- Cyclopropane reacts with bromine to give
 - bromocyclopropane
 - 2-bromopropane
 - 1, 2-dibromopropane
 - tribromocyclopropane
- PART B — (5 × 5 = 25 marks)
Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.
 - Give the mechanism of addition of HCN to carbonyl carbon.
Or
What is aldol condensation? Give its mechanism.
 - Give the preparation and structure of urea.
Or
Discuss the mechanism of esterification reaction.
 - What is Reformatsky reaction? Explain.
Or
Write the preparation and structure of Grignard reagent.
 - Define tautomerism. Give their types.
Or
Write any two synthetic uses of ethyl acetoacetate.
 - State and explain Sachse-Mohr theory.
Or
Explain the spectral properties of alicyclic compounds.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss the mechanism of the following reaction

- (i) Aldol condensation (4)
(ii) Wittig reaction (4)

Or

- (b) Write the preparation, properties and uses of chloral.

17. (a) Discuss the effect of substituents on the acidity of dicarboxylic acid.

Or

- (b) Write the preparation properties and uses of citric acid.

18. (a) Give the preparation and properties of thioethers.

Or

- (b) Write the preparation and reactions of alkyl zinc compounds.

19. (a) Explain the preparation and synthetic applications of diethyl malonate.

Or

- (b) Discuss the following with example
(i) keto-enol tautomerism (4)
(ii) oxime – nitroso tautomerism (4)

20. (a) Discuss the conformation of monosubstituted cyclohexanes.

Or

- (b) Discuss the synthesis of civetone and muscone.