

Reg. No. :

Code No. : 30579 E Sub. Code : AMCH 41

CBCS) DEGREE EXAMINATION, APRIL 2022

Fourth Semester

Chemistry — Core

ORGANIC CHEMISTRY — II

For those who joined in July 2020 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

What are the functional groups present in aldol?

- a) Alcohol, carboxylic acid
- b) Ketone, alcohol
- c) Ketone, aldehyde
- d) Aldehyde, alcohol

Which of the following will give primary alcohol with Grignard reagent?

- (a) HCOOH (b) CH_3COCH_3
- (c) HCHO (d) CH_3CHO

Acetoacetic ester may be used to prepare

- (a) Carboxylic acids
- (b) Ketones
- (c) Heterocyclic compounds
- (d) All the above

With methylene iodide malonic ester gives

- (a) Glutaric acid (b) Adipic acid
- (c) Succinic acid (d) (a) and (b)

Which of the following has minimum angle strain?

- (a) Cyclopropane (b) Cyclobutane
- (c) Cyclopentane (d) Cyclohexane

The most stable conformation of cyclohexane is

- (a) Boat (b) Chair
- (c) Half chair (d) Twist boat

2. Aldehydes are reduced to hydrocarbons using hydrazine in the reaction

- (a) Wolff Kishner reduction
- (b) MPV reduction
- (c) Wittig reaction
- (d) Reformatsky reaction

3. The most acidic one among the following acids is

- (a) CH_3COOH (b) CH_2ClCOOH
- (c) CHCl_2COOH (d) CCl_3COOH

4. Oxalic acid on heating with concentrated sulphuric acid gives

- (a) CO (b) CO_2
- (c) H_2O (d) All the above

5. What is Gilman reagent?

- (a) Lithium dimethyl cuprate
- (b) Diethyl lead
- (c) Mustard gas
- (d) None

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PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Write a note on Wittig reaction.

Or

(b) Explain Aldol condensation with the mechanism.

12. (a) Discuss the action of heat on α, β, γ -hydroxy acids.

Or

(b) Discuss the chemical properties of amides.

13. (a) Write a note on reformatsky reaction.

Or

(b) How will you prepare aldehydes and ketones from Grignard reagent?

14. (a) How will you prepare acetoacetic ester?

Or

(b) Write a note on nitroso-oxime tautomerism.

15. (a) Write any two methods of preparation of cycloalkanes.

Or

- (b) Explain the chemical properties of cycloalkanes.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Give a brief account on the preparation, properties and uses of acrolein.

Or

- (b) Write a note on :

- (i) Knoevenagel reaction
- (ii) MPV reduction
- (iii) Wolff – Kishner reduction

17. (a) Explain the mechanism of ester hydrolysis.

Or

- (b) Discuss the chemical properties of urea.

18. (a) Discuss the reactions of diethyl zinc.

Or

- (b) Discuss the synthetic applications of Grignard reagent.

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19. (a) Discuss the synthetic applications of acetoacetic ester.

Or

- (b) Write a note on keto-enol tautomerism.

20. (a) Discuss the synthesis and structure of Civetone.

Or

- (b) Write a note on the conformational analysis of methyl cyclohexane.

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