

(6 pages)

Reg. No. : .....

Code No. : 41100 E      Sub. Code : JMCH 31/  
SMCH 31

B.Sc. (CBCS) DEGREE EXAMINATION,  
NOVEMBER 2018.

Third Semester

Chemistry – Main

ORGANIC CHEMISTRY – II

(For those who joined in July 2016 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

1. What is the IUPAC name of crotonaldehyde?  
(a) But-2-en-1-al      (b) But-3-en-1-al  
(c) Propenal      (d) None
2. What is the product of action grignard reagent with ketone?  
(a) 3° alcohol      (b) 2° alcohol  
(c) 1° alcohol      (d) None

3. Which of the following is more acidic?  
(a) HCOOH      (b) CH<sub>3</sub>COOH  
(c) ClCH<sub>2</sub>COOH      (d) CH<sub>3</sub>CH<sub>2</sub>COOH
4. Which hydroxy acid gives  $\alpha, \beta$  -unsaturated acid on heating?  
(a)  $\alpha$  -hydroxy acid      (b)  $\beta$  - hydroxy acid  
(c)  $\gamma$  - hydroxy acid      (d) None
5. CH<sub>3</sub>Li reacts with CO<sub>2</sub> followed hydrolysis gives  
(a) Propyl alcohol      (b) Acetic acid  
(c) Ethyl alcohol      (d) None
6. Tetra ethyl lead is used a/an  
(a) anti-knock      (b) insecticide  
(c) catalyst      (d) none
7. \_\_\_\_\_ gives reddish violet colour with FeCl<sub>3</sub> solution  
(a) Keto form      (b) Enol form  
(c) Amido form      (d) None

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8. Antipyrine is prepared by treating phenyl hydrazine with

- (a) Acetoacetic ester (b) Malonic ester  
(c) Urea (d) None

9. The angle strain in cyclopentane is

- (a)  $-5.25^\circ$  (b)  $9-75^\circ$   
(c)  $0.75^\circ$  (d)  $24.75^\circ$

10. The most stable cycloalkane is

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

PART B — ( $5 \times 5 = 25$  marks)

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

Each answer should not exceed 250 words.

11. (a) Explain Aldol condensation and crossed aldol condensation with mechanism.

Or

(b) Discuss the properties of crotonaldehyde and succinaldehyde.

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12. (a) Explain the action of heat on dicarboxylic acids.

Or

(b) Discuss the preparation and properties of acid anhydrides and acid amides.

13. (a) Explain Reformatsky reaction and its importance.

Or

(b) Give the preparation and uses of mustard gas.

14. (a) Write an amido-imido tautomerism.

Or

(b) Explain nitro-acinitro tautomerism.

15. (a) Explain Sachse-Moh theory.

Or

(b) Explain Coutson and Moffitt's concept.

PART C — ( $5 \times 8 = 40$  marks)

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

Each answer should not exceed 600 words.

16. (a) Explain the following reactions with mechanism.

(i) Knoevenagel reaction

(ii) Wittig reaction.

Or

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[P.T.O.]



(b) Explain :

- (i) Addition of Grignard reagent with aldehydes and ketones.
- (ii) Mechanism of MPV reduction.

17. (a) Explain the preparation and properties of urea.

Or

(b) Give the preparation and properties of lactic acid and citric acid.

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

Or

(b) Explain the preparation and properties of diethyl zinc.

19. (a) How are the following compounds synthesized from Malonic ester?

- (i) Barbituric acid
- (ii) Cyclobutane carboxylic acid
- (iii) Glutaric acid
- (iv) Acetone.

Or

(b) Give the preparation and synthetic applications of cyanoacetic ester.

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20. (a) Explain the methods of preparation of Cycloalkanes.

Or

(b) Explain the properties of Cycloalkanes.

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