(6 pages) **Reg. No. :** 

Code No.: 6876 Sub. Code: PCHM21

M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Second Semester

Chemistry

## ORGANIC CHEMISTRY - II

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A —  $(10 \times 1 = 10 \text{ marks})$ 

Answer ALL questions.

Choose the correct answer :

- 1. For a linear molecule such as HCi, the number of modes of vibrations are \_\_\_\_\_
  - (a) 4
  - (b) 1
  - (c) 2
  - (d) 3

- 2. Vibrational transition exists in \_\_\_\_\_
  - (a) Infra red
  - (b) Micro wave
  - (c) Radio wave region of the spectrum
  - (d) Gamma rays
- 3. 1-Naphthol undergoes Birch Reduction to give
  - (a) 5,8-dihydro-1-Naphthol
  - (b) 5,8-dihydro-2-Naphthol
  - (c) Phenol
  - (d) 4,8-dihydro-2-Naphthol
- 4. The reaction used to convert an aldehyde into alkene is known as \_\_\_\_\_
  - (a) Wittig reaction
  - (b) Benzoin reaction
  - (c) Perkin reaction
  - (d) Bucherer reaction
- 5. Diazokatone can be converted into ketene by action of \_\_\_\_\_
  - (a) Sulphuric acid
  - (b) Nitric acid
  - (c) Crinnamaldehyde
  - (d) Silver oxide

Page 2 **Code No. : 6876** 

6. Benzamide reacts with sodium hypohalite to give

- (a) Benzene
- (b) Aniline
- (c) Benzoic acid
- (d) Salicylic acid
- 7. The reaction used to convert an oxime functional group to substituted amides \_\_\_\_\_
  - (a) Beckmann reaction
  - (b) Perkin reaction
  - (c) Wittig reaction
  - (d) Bucherer reaction
- 8. n-Heptyl penicillin is penicillin
  - (a) F
  - (b) G
  - (c) X
  - (d) K

9. For camphor the calculated  $\lambda$  max value is

- (a) 290nm
- (b) 219nm
- (c) 229nm
- (d) 331nm

Page 3 Code No. : 6876

10. Pyridoxine is Vitamin \_\_\_\_\_

- (a) B<sub>6</sub>
- (b) A
- (c) B
- (d) D

PART B —  $(5 \times 5 = 25 \text{ marks})$ 

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

Each answer should not exceed 250 words.

11. (a) Explain various electronic transitions in UV-visible absorption spectroscopy.

Or

- (b) Explain the importance of finger print region.
- 12. (a) Explain sharpless asymmetric epoxidation.

Or

- (b) Explain synthetic applications NaBH<sub>4</sub>.
- 13. (a) Explain the mechanism of Wolff rearrangement? What are its synthetic application?

Or

(b) Explain the mechanism of Schmidt rearrangement.

Page 4 **Code No. : 6876** 

14. (a) Draw the structures of chloramphenicol and cephalosporin.

Or

- (b) How is Lysergic acid synthesized.
- 15. (a) Discuss the synthesis of vitamin D.

 $\mathbf{Or}$ 

(b) Explain the synthesis of  $\alpha$ -santonin.

PART C —  $(5 \times 8 = 40 \text{ marks})$ 

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

Each answer should not exceed 600 words.

16. (a) Explain various factors influencing absoption of hydroxyl groups in IR spectroscopy.

 $\mathbf{Or}$ 

- (b) State and explain Woodward-Fiseser rule. Explain how  $\lambda$  max values are calculated for  $\alpha$ - $\beta$ -unsaturated ketones.
- 17. (a) Explain the mechanism of birch reduction.

Or

(b) Explain the mechanism of smiles rearrangement.

Page 5 **Code No. : 6876** 

18. (a) Discuss the mechanism of steven rearrangement. What are its applications?

Or

- (b) Discuss cine substitution with suitable example. What are its applications?
- 19. (a) Discuss the biosynthesis of tyrosine.

Or

- (b) Explain the synthesis of Reserpine and Quinine.
- 20. (a) Establish the structure of  $\alpha$ -pinene. Confirm the structure by synthesis.

Or

(b) Discuss the structure of camphor. Confirm the structure by synthesis.

Page 6 **Code No. : 6876**