

Roll No. 213112300255

Exam Code : D-22

Subject Code—58414

B. Sc. EXAMINATION

(Main/Reappear) (Batch 2018 Onwards)

(Third Semester)

CHEMISTRY

CCL-305

Course-VI

Organic Chemistry-III (Functional Group

Organic Chemistry-II)

Time : 3 Hours

Maximum Marks : 80

Note : Attempt *Five* questions in all. Q. No. 1 is compulsory. Select *one* question from each Section.

(Compulsory Question)

1. (i) Account for fact that C-O bond length is shorter in carboxylic acids than alcohols.

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- (ii) Give one method of preparation of acetamide.
- (iii) How will you distinguish between ethyl amine and aniline ?
- (iv) Starting from benzene, synthesize m-bromophenol.
- (v) Define Electrophoresis.
- (vi) Why are amino acids known as amphoteric compounds ?
- (vii) What is difference between anomers and epimers ?
- (viii) Draw Haworth formula structure for Lactose. $8 \times 2 = 16$

Unit I

2. (a) How will you prepare (i) Propionic acid from acid chloride (ii) Isobutyric acid from an aldehyde (iii) Benzoic acid from an aromatic hydrocarbon. $3 \times 3 = 9$
- (b) Out of benzoic acid and p-nitrobenzoic acid, which is stronger acid ? Explain. 7

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3. (a) Give mechanism of acidic hydrolysis of acid derivatives. 8

- (b) Give mechanism of Reformatsky reaction. 8

Unit II

4. (a) Discuss mechanism of Hoffman bromamide reaction. 6

- (b) Starting from aniline how will you obtain : 6

- (i) Sulphanilic acid

- (ii) p-nitroaniline ?

- (c) Give two methods of preparation of diazonium salts. 4

5. (a) Discuss mechanism of coupling reaction. 8

- (b) Write products of reaction between benzene diazonium chloride with CuCl and phenoxide ion. 8

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Unit III

6. (a) Discuss Gabriel phthalamide synthesis of amino acids. 6
(b) Discuss tertiary structure of proteins. 5
(c) Classify proteins on the basis of their shape. 5
7. (a) What functions proteins perform in our body? 8
(b) What is meant by C-terminal residue in proteins? 8

Unit IV

8. (a) Discuss the structure of sucrose. 4
(b) Draw Haworth projection formula of α -D Glucose and Maltose. 6
(c) Explain Wohl degradation. 6
9. (a) What are anomers and epimers? 5
(b) Discuss cyclic structure of α -D Fructofuranoside. 5
(c) How will you convert fructose into glucose? 6

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