

Roll No.

(09/20-I)

5230

B. Sc. EXAMINATION

(For Batch 2013 & Onwards)

(For Re-appear Candidates Only)

(Fourth Semester)

CHEMISTRY

Paper–XIII (CH-206)

Organic Chemistry

Time : Three Hours

Maximum Marks : 27

Note : Attempt *Five* questions in all. Q. No. 1 is compulsory. Attempt *two* questions out of three from each Sections A and B.

1. (a) Write IUPAC name of α -methylbutyric acid.

- (b) Arrange various position isomers of nitrobenzoic acid in decreasing order of acid strength.
- (c) What is 'Finger Print Region' in IR spectroscopy ?
- (d) What are symmetric stretching vibrations in CO_2 molecule ?
- (e) Name chemical test to distinguish between an aliphatic primary amine from aromatic primary amine.
- (f) What are Zwitter ions ? Give one example.
- (g) Why do amines act as nucleophiles ?

1×7=7

Section A

- 2. (a) Explain HVZ reaction with example. 3
- (b) Discuss mechanism of base hydrolysis of esters. 2
- 3. (a) Outline mechanism of decarboxylation of carboxylic acid by soda-lime process. 3
- (b) Explain, why amides are weaker bases than amines ? 2

B-5230

2

- 4. (a) How will you differentiate between propanamine and propanamide on the basis of IR spectroscopy ? 2
- (b) Identify structure of C_4H_8 with the following absorption bands : 3
 - (i) 3015 cm^{-1}
 - (ii) 1680 cm^{-1}
 - (iii) 960 cm^{-1}
- 5. (a) How can you convert an amide into an amine having one carbon atom less than the starting amide ? Name this reaction. 3
- (b) Discuss Gabriel phthalimide synthesis. 2
- 6. (a) Write equations for preparation of the following : 3
 - (i) Aniline from nitrobenzene
 - (ii) Acetanilide from aniline
 - (iii) Ethyl carbylamine from ethylamine.
- (b) How will you convert aniline into : 2
 - (i) *p*-Hydroxyazobenzene
 - (ii) Sulphanilic acid.

(1-13/9) B-5230

3

P.T.O.

7. (a) Write chemical equation leading to preparation of benzenediazonium chloride. 2
- (b) Write down coupling reactions of benzenediazonium chloride with phenol and aromatic amine. 3