

Roll No.

(05/16-I)

5230

B. Sc. EXAMINATION

(For Batch 2013 & Onwards)

(Fourth Semester)

CHEMISTRY : ORGANIC CHEMISTRY

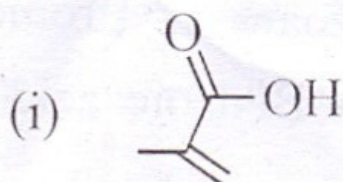
Paper XIII (CH-206)

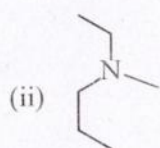
Time : Three Hours

Maximum Marks : 27

Note : Attempt *Five* questions in all, selecting at least *two* questions from each Section. Q. No. 1 is compulsory.

1. (a) For acylation reaction acetic anhydride is preferred over acetyl chloride, why ? 1
- (b) Give IUPAC nomenclature of the following organic compounds : 2





- (c) Deduce the number of fundamental vibrations possible for CO_2 . 1
- (d) Out of trimethylamine and *n*-propylamine, which is having higher boiling point and why? 1
- (e) What is Diazotisation? 1
- (f) How IR spectroscopy is helpful in differentiating between dimethyl ether and ethanol? 1

Section A

2. (a) Give mechanism of acidic hydrolysis of ester. $1\frac{1}{2}$
- (b) Explain Hell-Volhard-Zelinsky reaction. $1\frac{1}{2}$
- (c) How will you do the following conversions? 2
- (i) Silver benzoate \rightarrow Bromobenzene
- (ii) Toluene \rightarrow Benzoic acid

3. (a) Discuss briefly the effect of substituents on the acidity of aromatic carboxylic acids. 2
- (b) What is Hoffman bromide reaction? Using this reaction how will you convert benzoic acid to aniline? 2
- (c) How IR spectroscopy is helpful in determining whether a hydroxyl group in an organic compound is free or associated? 1
4. (a) What are fundamental vibrations? Name their types with examples. 2
- (b) Give selection rules for IR spectroscopy. 2
- (c) Give values of characteristics $\text{C}=\text{O}$ stretching band of IR of carboxylic acid derivatives. 1

Section B

5. (a) Can we prepare aniline by Gabriel-phthalimide reaction? Explain. 2

(b) Discuss at least three methods of preparation of aryl amines. 3

6. (a) Give a suitable explanation for the following : 2

(i) Aniline is weaker base than ammonia

(ii) Ethylamine is more basic than aniline.

(b) What is Hoffmann bromide reaction ? Explain giving mechanism. 3

7. (a) Why arenediazonium salts are highly reactive ? 1

(b) What are coupling reactions ? Discuss their synthetic applications. 4