

2019

B.Sc.

4th Semester Examination  
**CHEMISTRY (Honours)**

Paper - C10P  
(Organic Chemistry)

[Practical]

Full Marks : 20

Time : 3 Hours

*The figures in the margin indicate full marks.  
Candidates are required to give their answers  
in their own words as far as practicable.*

1. Estimation of Vit-C

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**Procedure :**

**Determination of strength of iodine solution :** 0.5 g (x) of  $\text{As}_2\text{O}_3$  is taken in a beaker and 2 ml 20% NaOH is added.  $\text{As}_2\text{O}_3$  is dissolved by heating. The mixture is cooled and transferred quantitatively to a 100 ml volumetric flask and made up the volume with water. Now 25 ml of this diluted solution is

*[ Turn Over ]*



( 2 )

pipetted out in a 250 ml conical flask and acidified with dil HCl. Bicarbonate is added to reduce the acidity. Then it is titrated with 0.1 (N) iodine solution adding 2 g  $\text{NaHCO}_3$  to the first permanent pale straw colour. Starch solution is not required to be added. If it is added then the colour of the solution will be blue at the end point.

*Or;*

2. Estimation of saponification Value of Oil. 20

**Procedure :**

1. At first 250 ml standard (N/2) oxalic acid is prepared.
2. Now, the prepared (N/2) alcoholic KOH solution is standardised against the standard (N/2) oxalic acid using phenolphthalein indicator (1 ml).
3. And the prepared (N/2) HCl solution is standardised against the standard (N/2) KOH solution using phenolphthalein as indicator (1 ml).
4. 2 g of the sample weighed accurately is taken in a 250 ml conical flask. 25 ml of (N/2) alcoholic KOH is added. The content of the flask is heated on a water bath for 1 hour with



reflux condenser fitted to the conical flask. The condenser is washed down with 5 ml neutral ethanol. Phenolphthalein (1 ml) indicator is added, cooled and the excess KOH is titrated against (N/2) HCl solution.

A blank test (without oil) under similar conditions is performed.

*Or,*

### 3. Estimation of Phenol

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#### **Procedure :**

10 ml of the sample solution is taken in a 250 ml glass stoppered conical flask, 20 ml 0.2 (N)  $\text{KBrO}_3/\text{KBr}$  mixture and 5 ml conc. HCl are added. After covering the flask is kept at room temperature for 30 minutes with occasional shaking. Now 2 g KI is added and kept it for another 5 minutes. Then it is titrated with standard  $\text{Na}_2\text{S}_2\text{O}_3$  solution till the colour turns to pale straw colour. At this stage a few ml of starch indicator is added and the colour of the solution turns blue. The titration is then continued till the blue colour just disappears.

A blank titration with 10 ml distilled water is then performed.

*[ Turn Over ]*



Or,

#### 4. Estimation of Aniline

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(a) **Preparation of (N/5) standard  $\text{KBrO}_3$  solution** : About  $\frac{1.392}{4}$  g of  $\text{KBrO}_3$  is weighed accurately and transferred to a 250 ml volumetric flask containing  $\frac{15}{4}$  g  $\text{KBr}$ . The mixture is dissolved in distilled water and the volume is made up to the mark.

(b) **Titration of stock solution** : 10 ml of sample solution is pipetted out into a 250 ml well stoppered conical flask. 20 ml (N/5)  $\text{KBrO}_3$ — $\text{KBr}$  mixture is added to it followed by 5 ml conc.  $\text{HCl}$ . It is kept at room temperature for 30 minutes with occasional shaking. 2 g of  $\text{KI}$  is added to it and kept for another 5 minutes after well shaking. The liberated iodine is then titrated with standard thiosulphate solution till straw yellow colour appears. At this stage a few ml of starch indicator is added and titration is continued till the blue colour just disappears. The process is repeated twice.

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