2018

2nd Semester

CHEMISTRY

(Honours)

PAPER—C3P

(Practical)

Full Marks : 20

Time : 2 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

1. Estimate the total amount of Fe^{2+} and Fe^{3+} in the supplied solution using $K_2Cr_2O_7$ solution. 15

2. Laboratory Note Book. 2

3. Viva-voce. 3

Procedure

1. Prepare 250 cc standard $\left(\frac{N}{10}\right)$ $K_2Cr_2O_7$ solution.

2. Preparation of stock solution :

Transfer the supplied solution marked 'V' into a 250 ml volumetric flask quantitatively and make the volume upto the mark with distilled water.

3. Estimation of Fe^{II} iron :

Pipette out 25 ml of the stock solution into a 250 ml conical flask, dilute to 150 ml with distilled water. Add 5 ml conc. H_2SO_4, 5 ml syrupy H_3PO_4 followed by few drops of BaDS indicator. Titrate the mixture with standard $K_2Cr_2O_7$ solution with constant shaking until the first permanent red-violet colouration. Repeat the experiment to get concordant result. Record the titre value and calculate the amount of Fe(II) present in solution.

21.5

4. Estimation of Fe^{II} + Fe^{III} iron :

Pipette out 25 ml of the mixture into a 500 ml conical flask. Add 20 ml conc. HCl. Heat nearly to boiling and reduce Fe^{III} to Fe^{II} using small pieces of AR grade Al-foil stepwise. Dilute the solution to 200 ml with distilled water. Add 5 ml conc. H_2SO_4, 5 ml sympy H_3PO_4 followed by few drops of BaDS indicator. Titrate with standard $K_2Cr_2O_7$ with constant shaking until the first permanent red-violet colouration. Repeat the experiment to get concordant result. Record the titra value and calculate the amount of Fe^{II} and Fe^{III} present in the solution. And from the difference report the amount of Fe^{III} present in solution.

[1000 ml IN $K_2Cr_2O_7$ solution ≡ 55.85 gm Fe]
