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**CHEMISTRY (Major)**  
**B.Sc. Second Semester End Examination - 2024**  
**PAPER - SEC02P**  
**(Practical)**

**Full Marks : 20**

**Time : 2 hours**

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

*Illustrate the answers wherever necessary.*

Carry out the following experiment	15
1. Estimate the amount of dissolved oxygen present in the given sample.	
(i) Tables	2
(ii) Determination of strength of thiosulphate	3
(iii) Calculation	2
(iv) Result	8
2. Laboratory Note Book	2
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*(Turn Over)*

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**Procedure :**

**1. Prepare a 250 mL standard (N/20)  $K_2Cr_2O_7$  solution**

Report the weight taken up to 4 decimal places.

**2. Standardization of supplied thiosulphate solution with standard (N/20)  $K_2Cr_2O_7$  solution.**

Pipette out 25 mL standard (N/20)  $K_2Cr_2O_7$  in a 500 mL conical flask, add 2 g of sodium carbonate followed by the addition of 25 mL 4N  $H_2SO_4$ . Swirl the solution and wait for 2 minutes. Add 2 g of solid KI and cover the flask with watch glass. Keep it in dark for 5 minutes. Wash the watch glass and inner surface of conical flask with water. Dilute the solution with 150 mL distilled water. Titrate with thiosulphate solution till a straw yellow colour solution appears. Add 2 mL starch indicator. Solution turns intense blue. Continue titration with thiosulphate solution until light green colour solution persists.

**Determination of DO**

Take 200 mL of supplied water sample in a 250 mL bottle. Add 2 mL 40% KF, 2 mL of 36%  $MnSO_4$  and 3 mL of alkaline iodide-azide solution. Shake well and allow the

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precipitate to settle down (if any). Add 2 mL conc.  $H_2SO_4$  and shake well till the precipitate gets dissolved. Titrate the liberated iodine with standard thiosulphate solution until the solution turns light yellow colour. Add few drops of starch indicator and further titrate with thiosulphate solution until the solution becomes colourless or goes back to original solution colour.