Con. 3688–13.    Sem III (Rev.) ATKT - Ph. Analysis- II    DC–2195

(2 Hours)    [Total Marks : 40

N.B. :  (1)  Attempt any **four** questions.
        (2)  **Figures** to the **right** indicate **full** marks.
        (3)  Draw **neat** and labelled **diagrams** wherever **required**.

1. (a) Explain the following terms :–    5
       (i) Polarized light
       (ii) Grazing angle of incidence
       (iii) Absolute error
       (iv) Organic precipitant
       (v) Significant figures.
   (b) What are the different methods for water content determination ? Explain any    5
       one method in detail.

2. (a) Describe oxygen flask combustion method for the determination of organically    5
       bound halogens with one pharmaceutical application.
   (b) The optical rolation of a oil sample in a 100 mm tube and having a density of    5
       0·9580 is found to be 11·55 degrees at 25°C. Calculate the specific rotation of
       the oil.

3. Write a short notes on any **two** :–    10
   (a) Kjeldhal's method for nitrogen determination.
   (b) Principle and working of Abbe's refractometer.
   (c) Differentiate between determinate and indeterminate errors and explain ways
       to minimize determinate errors.

4. (a) Calculate the mean, median, RSD, variance, standard deviation for the following    5
       set of observations made in identical titrations
               15·62,  15·73,  15·75,  15·78,  15·83,  15·80.
   (b) Explain the various factors influencing liquid-liquid extraction. Explain counter    5
       current distribution.

5. (a) Explain the working and principle of a Polarimeter with the help of suitable    5
       block diagram.
   (b) Explain various unit operations involved in gravimetry and write a note on    5
       gravimetric determination of aluminium.

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