Tabulation :-

Object	Weight		Rider		Correct weight (gm)
	Gm	MgM	±	weight	
Wt of empty Crucible	31	240	+	-	31.240
Wt of Crucible + PPt	31	450	-	-	31.450

Calculation :-

Weight of PPT :

253.34 gm of $BaCrO_4$ Contains 137.34 gm of barium

Wt gm of $BaCrO_4$ Contain $\frac{137.34}{253.34} \times W$ gm of barium

Weight of barium present in the Whole of the given Solution $= \frac{137.34}{253.34} \times W \times \frac{200}{20}$

$= \frac{137.34}{253.34} \times 0.210$

$= 0.1138$ gm

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Estimation of Barium as Barium Chromate

Aim :-

To estimate gravimetrically the amount of barium present in the whole of the given solution of barium Chloride.

Principle :-

Barium is precipitated as barium Chromate by adding potassium Chromate solution in acetic acid medium.

$$BaCl_2 + K_2CrO_4 \longrightarrow BaCrO_4\downarrow + 2KCl$$

The ppt is filtered in a Sintered Crucible, the weight washed dried at 120°C and weighed. From the weight of barium Chromate, the weight of barium is Calculated.

Procedure :-

The given solution of barium Chloride is made up to 200 ml in a Standard flask. 20 ml of this made up solution is pipetted out into a 400 ml beaker provided with a glass rod and 10 ml of dilute (2N) acetic acid is added. The solution is diluted to 150 ml and heated to boiling. To the hot solution, about 15 ml of a 4% solution of potassium Chromate is added slowly with Constant Stirring. The

Weight of barium present in the whole of given solution $= \frac{137.34}{253.34} \times \frac{W \times 100}{20}$

$= 0.5421 \times \frac{0.210 \times 100}{20}$

$= 0.5421 \times 1.05$

$= 0.5692$ gm.

Table - B.

Object	Weight		Rider		Correct weight
	Gm	Mgm	±	weight	
Weight of empty crucible	23	400	-	-	23.400
Weight of Crucible + ppt	23	630	-	-	23.630

Weight of precipitate (B) = 0.230

gm of $BaCrO_4$ Contain = 13.34 gm of barium

Wt of gm of $BaCrO_4$ Contain $= \frac{137.34}{253.34} \times$ Wt of gm of barium

$= \frac{137.34}{253.34} \times 0.230$

$= 0.1246$ gm

digested on a hot water bath for 15 minutes to make the ppt granular. The ppt is then allowed to settle. The Supernatent liquid must be coloured yellow. A few drops of pot. Chromate Solution is added to the Supernatent liquid through the sides of the beaker to test for completion of precipitation. When there is no turbidity, the precipitation is complete. The ppt is then filtered in a previously weighed Sintere Cr_4 Gr Crucible. First the Supernatent liquid is poured. The ppt in the beaker is washed with hot water and the washing also added to the Crucible. The Process of washing repeated 3 or 4 times till the filtrate is free from Chromate ions (no yellow ppt with lead acetate Solution). The whole ppt is then transferred to the Crucible. Any precipitat adhering to the sides of the beaker and the glass rod removed using a police man. The ppt in the Crucible is then dried at 120°c for 2 hours in a hot air oven. The Crucible is finally Cooled in a desiccator and weighed. The process of weighing repeated till a Constant weight is obtained. A duplicate experiment is Conductic Simultaneously.

Weight of barium present in the whole of given solution $= \frac{137.34}{253.34} \times \frac{W \times 100}{20}$

$= 0.5421 \times \frac{0.230 \times 100}{20}$

$= 0.5421 \times 1.15$

$= 0.6234$ gm

Result :

Amount of barium present in the whole of the given solution : Table A = 0.5692 gm

Table B = 0.6234 gm