Tabulation (A).

Object	Weight		Rider		Correct weight (gm)
	CTM	MgM	±	weight	
wt. of empty Crucible	31	630	-	-	31.630
Wt. of Crucible + ppt	31	830	-	-	31.830

Weight of ppt (A) = 0.200.

gm of $PbCrO_4$ Contain 207.2 gm of lead

∴ Wt gm of $PbCrO_4$ Contains $\frac{207.2}{323.2}$ × wt gm of lead

$= \frac{207.2}{323.2} \times 0.200$

Weight of the lead present in whole of the given Solution $= \frac{207.2}{323.2} \times \frac{W \times 100}{20}$

$= \frac{207.2}{323.2} \times \frac{0.200 \times 100}{20}$

$= 0.6411 \times 1.0$

$= 0.6411$ gm

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Estimation of lead as lead Cromate

Aim :-

To estimate gravimetrically the weight of lead present in the whole of the given Solution of lead acetate (or lead nitrate).

Principle :-

lead is precipitated as lead Chromate in acetitic acid medium by the addition of potassium Chromate Solution.

$Pb(Ac)_2 + K_2CrO_4 \rightarrow PbCrO_4 \downarrow + 2KAc$

$Pb(NO_3)_2 + K_2CrO_4 \rightarrow PbCrO_4 \downarrow + 2KNO_3$

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

Tabulation (B)

Object	Weight		Rider		Correct weight (gm)
	GM	MgM	±	Weight	
Wt. of empty Crucible	31	760	–	–	31.760
Wt. of Crucible + ppt	31	960	–	–	31.960

Weight of the ppt (B) = 0.200

gm of $PbCrO_4$ Contain 207.2 gm

∴ Wt gm of $PbCrO_4$ Contains = $\frac{207.2}{323.2}$ × Wt gm of lead

$= \frac{207.2}{323.2} \times 0.200$

Weight of lead present in the whole of given Solution = $\frac{207.2}{323.2} \times \frac{W \times 100}{20}$

$= \frac{207.2}{323.2} \times \frac{0.200 \times 100}{20}$

$= 0.6411 \times 1.0$

$= 0.6411$ gm

Procedure :

The given Solution of lead acetate (or lead nitrate) 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 glass rod and 2 ml of dilute (2N) acetic acid is added. The Solution is diluted to 150 ml and heated and boiling. To the hot Solution about 15 ml of a 4% Solution of potassium Chromate is added slowly with constant of stirring. The ppt is digested on a hot water bath for 15 minuts to make the ppt granular. The ppt is then allowed to settle. The Supernatent liquid must be yellow in colour.

The Completion of precipitation is tested by adding a few drops of pot. Chromate Solution to the Supernatent liquid through the sides of the beaker. When there is no turbidity. The precipitation is Complete. The ppt is then filtered in a previously weighed Sintered G/4 Crucible. First the Supernant liquid is tranferred. The ppt is the Supernatent liquid is transferred. The ppt in the beaker is washed 3 or 4 times with hot water and washings are also poured into the Crucible. When the washings are free from Chromate ions, the whole of the ppt is transferred to

to the Crucible. Any precipitate adhering to the sides of the beaker and the glass rod is removed Using a policeman. The ppt in the Crucible is then dried in a hot air oven kept at 120°c for 2 hours. The Crucible is finally Cooling in a desicator and weighed. The process of drying a weighing is repeated till a Constant weight is obtained. A duplicate experiment is also Conducted.

Result:-

Amount of the Presen in the whole of the given Solution } = 0.6411 gm (I)
0.6411 gm (II)