

FBISE PRACTICAL BASED ASSESMENT (PBA)

Guidelines/instructions for teachers/paper setters:

- i. There will be two Sections in PBA paper. In Section-A there will be one question having parts in it. Similarly, in Section-B there will be one question having parts in it.
- ii. In Section-A, Question No. 1 will be based only on one experiment taken from Part-I of the list of practicals.
- iii. In Section-B, Question No. 2 will be based on multiple experiments taken from Part-II of the list of practicals.
- iv. Ratio of Part-I practicals is 60% while ratio of Part-II practicals is 40% in the PBA paper.
- v. Draw diagram(s) if asked for.
- vi. In the new pattern of practicals i.e. Practical Based Assessment (PBA), there will be no marks for practical note books and viva voce. However, students may record procedures, observations, apparatus and calculation etc on any type of plain papers/work sheets / practical folder for their future memory of all aspects of practical performance in order to attempt the PBA Examination amicably.
- vii. It may be noted that performance of all the prescribed practicals is mandatory in the laboratories during the whole academic year and only those students will be able to attempt the PBA who will have performed the practicals in the laboratories as per requirement of each practical.

List of Practicals HSSC-I

Chemistry

	Part-I (60% of practical marks ---- 9 Marks)
1.	The given solution contains 6gms of Na_2CO_3 dissolved per dm^3 . Determine the Percentage Purity of the Sample Solution by Volumetric Method
2.	Determine the Value of X by Volumetric Method in the Given Sample of 6.3g of $(\text{COOH})_2 \cdot \text{XH}_2\text{O}$ Dissolved per dm^3 .
3.	Standardize the Given Solution of KMnO_4 and Calculate the Volume of KMnO_4 Required for Preparing 1 dm^3 of 0.01M KMnO_4 Solution Volumetrically.
4.	Determine the Percentage Composition Volumetrically of a Solution Mixture of $\text{K}_2\text{C}_2\text{O}_4$ and K_2SO_4 .

	Part-II (40% of practical marks ---- 6 Marks)
1	Separate the Given Mixture of Inks by Paper Chromatography
2	Cadmium in a mixture Separate Lead and solution by Paper Chromatography
3	Purify a Given Sample of Sodium Chloride by Passing HCl Gas. (Application of common ion effect)
4	Determine the Heat of Neutralization of NaOH and HCl

**FEDERAL BOARD OF INTERMEDIATE
AND SECONDARY EDUCATION
ISLAMABAD**

**Subject: Chemistry HSSC-I
Paper: Practical Based Assessment (PBA)**

Total Marks: 15

Time: 60 minutes

Name of Examination: _____

Centre Code: _____

Date: _____

Sig. of Dy. Supdt. _____

Roll Number						
0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

Instructions for students:

1. Carefully read all the questions and then answer them at the specified spaces.
2. Use black or blue ball point.
3. Marks are mentioned against all questions in the brackets [].
4. Students may use the last page for rough work (if required).
5. Answer the questions as per given instructions.

MODEL PAPER HSSC-I CHEMISTRY

Note: Attempt all questions and answer the questions within the provided spaces.

SECTION-A

Q 1: Purpose of this experiment is to determine the percentage purity of the sample solution by volumetric method when the given solution contains 6 gms of Na_2CO_3 dissolved per dm^3 .


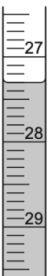

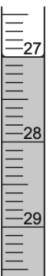

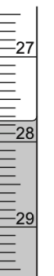
Apparatus used:

Burette, pipette, funnel, conical flask, beakers, iron stand.

Chemical used:

Methyl orange, Na_2CO_3 , 0.1M HCl,
Distilled water, solution of 6g of Na_2CO_3 in 1dm^3
 10cm^3 Na_2CO_3 required volume V_2 of HCl in cm^3

See on the figure given below and record the observations in table.

Titration 1		Titration 2		Titration 3	
Initial reading	Final reading	Initial reading	Final reading	Initial reading	Final reading
					

i. Observation Table:

[02]

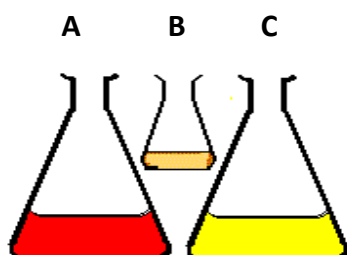
Exp No.	Initial Reading	Final Reading	Volume of HCl used
1			
2			
3			

Mean volume of HCl used= cm^3

ii.) Which one of the following figure shows the end point when acid is added to Na_2CO_3 Solution ?

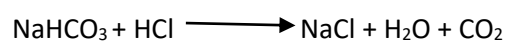
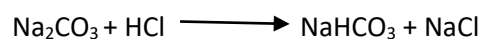
Encircle the correct option.

[01]



iii. What is the purpose of using methyl orange : [01]

iv.) Chemical Equations:



Write Overall Reaction: [01]

v.) Calculations:

Find n_1 of Na_2CO_3 and n_2 of HCl from chemical equation

$n_1 = \dots\dots\dots$ $n_2 = \dots\dots\dots$ [01]

- You are advised to show full working in all parts of calculations.

a. Calculate the molarity of Na_2CO_3 by using formula:

$$\frac{M_1 V_1}{n_1} = \frac{M_2 V_2}{n_2} \quad [01]$$

b. Calculate mass of Na_2CO_3 per dm^3 from 'a' after titration [01]

c. Percentage purity $\text{Na}_2\text{CO}_3 = \frac{\text{mass of Na}_2\text{CO}_3 \text{ obtained from 'b'}}{\text{mass of Na}_2\text{CO}_3 \text{ dissolved}} \times 100$ [01]

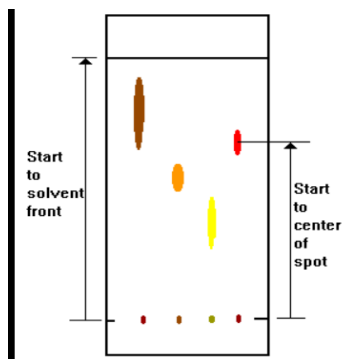
Result:

Percentage purity of $\text{Na}_2\text{CO}_3 =$

SECTION-B

Q 2: Encircle the correct option.

Chromatogram of a mixture of ink is shown:



Height of the solvent front is 10cm, distance covered by yellow is 4.7cm Rf value of yellow ink is: **[01]**

- A. 4.7cm
- B. 0.47cm
- C. 47cm
- D. 10cm

i.) Rock salt can be purified by common ionic effect which of the following will give precipitates. **[01]**

- A. Rock salt solution +HNO₃
- B. Rock salt solution +HCl
- C. Rock salt solution +H₂SO₄
- D. Rock salt solution +KCl

iii.) Lead and Cadmium are colorless liquids. They can be separated by paper chromatography, which one of the following coloring agent can be used to identify Lead and Cadmium? **[01]**

- A. Ninhydrin solution
- B. HCl solution
- C. H₂S solution
- D. HBr solution

iv.) Estimate the Amount of Ba⁺² in the given solution of BaCl₂ gravimetrically can be done by the addition of: **[01]**

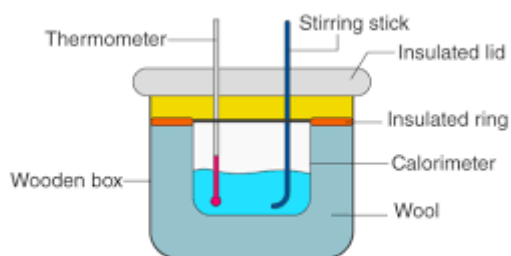
- A. K₂Cr₂O₇ solution
- B. K₂CrO₄ solution
- C. K₂CrO₃ solution
- D. K₂Cr₂O₃ solution



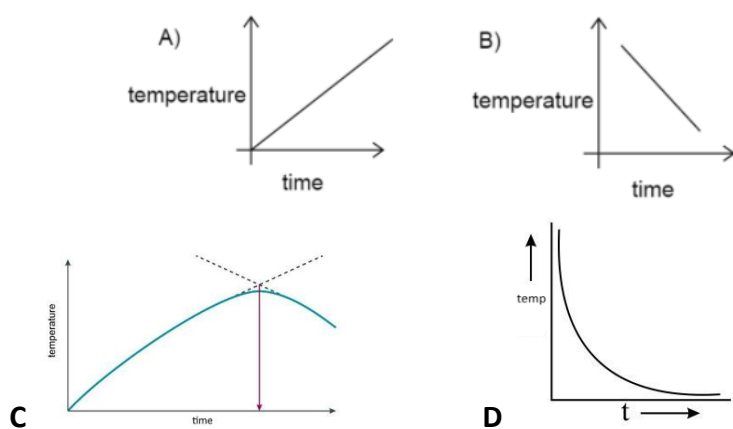
v.) Ba^{+2} in the given solution of BaCl_2 can be estimated by gravimetrically yellow color of the solution is given by: [01]

- A. BaCl_2 solution
- B. K_2CrO_4 solution
- C. KCrO_4 solution
- D. $\text{K}_2\text{Cr}_2\text{O}_7$ solution

vi.)



Heat of Neutralization of NaOH and HCl can be determined by the apparatus shown, which one of the following graph can be used to calculate heat of neutralization. [01]



ROUGH WORK