Guidelines for Higher Secondary Practical Evaluation 2022-2023
CHEMISTRY (Class XII)

Laboratory work plays a crucial role in the proper assimilation of concepts in science. Along with term end evaluation at the end of academic year, practical evaluation (PE) is also to be conducted. The skill in performing qualitative and quantitative analysis is to be assessed through PE. The following are the guidelines to be followed while conducting PE during the academic year 2022-2023

- Sufficient number of apparatus is to be provided to the students
- The apparatus should be of quality brands
- Sufficient number (at least 30) of standardised and calibrated apparatus should be kept aside for conducting PE
- A minimum of 6 salts (those soluble in water) for systematic analysis of anion & cation should be given to the students
- A minimum of 6 single titrations (Acidimetry-2, Alkalimetry-2, Permanganometry-2) should be given for volumetric analysis.
- The practical log book should contain all the necessary recording related to the first year and second year practical syllabi collectively.
- Required facilities should be arranged in the laboratory for students demanding special attention because of deformities.
- The score distribution (detailed split up appended) should be as follows
    - Qualitative analysis (Anion & Cation Analysis) - 16 scores
    - Quantitative analysis (Single titration only) - 15 scores
    - For writing principle & procedure for quantitative analysis - 3 scores
    - Practical Log book - 4 scores
    - Viva voce - 2 scores
- The viva voce should be done for ascertaining the awareness of concepts related to the practical. It should not create tension to the students. It should be a casual interaction with the students through simple questions related to practicals only to check whether she/he has conceptual clarity in the given work.

Scheme of work for Practical Evaluation

Class XII

CHEMISTRY

Detailed split up of scores

1	**Practical Log Book**	Score
	Basic laboratory techniques	½
	Physical chemistry experiments (Two)	½
	Reactions of anions and cations	½
	Salt analysis (6 salts)	½
	Reactions of organic compounds (Carboxylic acid, Phenol, Aniline, Aldehyde and Ketone)	½
	Volumetric analysis (Acidimetry-2, Alkalimetry-2, Permanganometry-2)	1½
2	**Viva voce** (Ascertaining the awareness of concepts related to the practical through simple questions informally)	2
3	**Qualitative analysis**	
	Anion	
	Identification of anion (One test)	4
	Confirmatory test (One test)	4
	Cation	
	Identification of group (One test)	2
	Identification of cation (one test)	3
	Confirmatory test (One test)	3
4	**Quantitative analysis (Single titration)**	
	Tabulation and recording	4
	Calculation	
	Normality of standard solution	1½
	Normality of solution to be estimated	1½
	Correct equivalent masses	2
	Correct calculation of the result with unit	2
	Correct reading of the result	
	Error within 1% (Full score)	4
	Error up to 2%	3
	Error above 2%	2
5	**For writing the principle and procedure for quantitative analysis**	
	For writing balanced chemical equation	1
	Procedure	
	Solution in pipette	½
	Solution in burette	½
	Indicator used	½
	Colour change	½

Note

(i) The procedure for quantitative analysis should be obtained in detail.

(ii) The student need not weigh the substance. The standard solution for estimation should be provided by the examiner.

(iii) The student has to make up the solution for estimation.

(iv) Systematic analysis should be followed in inorganic analysis.

(v) Normality may be used as the concentration for volumetric analysis.

Sample Question Paper for Practical Evaluation

HIGHER SECONDARY PRACTICAL EXAMINATION 2022-23
CHEMISTRY

Maximum Score : **40**

Time : **3** Hours

1. Estimate the mass of Oxalic acid in the whole of the given solution. You are provided with a standard solution of $KMnO_4$ containing 3.16 g/L. **(Score :15)**
2. Briefly write the principle and procedure for the above estimation within first 5 minitues . **(Score :3)**
3. Analyse the given salt and identify and confirm systematically the anion and cation present in it. **(Score: 16)**
4. Viva voce
   (Informal simple questions to know awareness on practical) **(Score : 2)**
5. Practical Record **(Score :4)**