

TECHNICIAN (Chemical & Biological Sciences)

Skill Test Pattern and Syllabus (Indicative)

17.12.2025

The skill test consists of two parts 1) Practical knowledge test and 2) Laboratory test

The level of test is XII in Chemistry.

Practical Knowledge Test

The objective test will be for **60** marks and duration of the test will be for **01** hour.

The medium of language will be English only.

Laboratory Test

The lab test will be for **40** marks and duration of the test will be as per concerned department convenience.

The medium of language will be English only.

The indicative syllabus for practical knowledge test and laboratory test is given below.

Preparation of standard solution of Oxalic acid. Determination of strength of a given solution of Sodium hydroxide by titrating it against standard solution of Oxalic acid.

Preparation of standard solution of Sodium carbonate. Determination of strength of a given solution of hydrochloric acid by titrating it against standard Sodium Carbonate solution.

Estimation of Fe(II) in Mohr's salt solution using standard KMnO_4 solution via redox titration.

Determination of the molarity of KMnO_4 solution by titrating it against a standard solution of Oxalic acid.

Comparing the pH of solutions of strong and weak acids using pH meter.

Reaction between Potassium Iodate, (KIO_3) and Sodium Sulphate: (Na_2SO_3) using starch solution as an indicator (clock reaction).

Reaction of Iodide ion with Hydrogen Peroxide at room temperature using different concentrations of Iodide ions.

Separation of pigments from extracts of natural compounds by chromatography and determination of R_f values.

Variation of cell potential in $\text{Zn}/\text{Zn}^{2+} || \text{Cu}^{2+}/\text{Cu}$ with change in concentration of electrolytes (CuSO_4 or ZnSO_4) at room temperature.

Preparation of double salt of Ferrous Ammonium Sulphate or Potash Alum, Potassium Ferric Oxalate.

Detection of Nitrogen, Sulphur, and halogens in organic compounds. Tests for the functional groups present in organic compounds: Unsaturation, alcoholic, phenolic, aldehydic, ketonic, carboxylic, and amino groups.

Qualitative analysis: Different Cations and Anions of salts.

Characteristic tests of carbohydrates and proteins in the given foodstuffs.

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