

MJD Govt. College Taranagar (Churu)
Department of Chemistry
B.Sc.-I (Syllabus)
PRACTICAL EXAM

(A) INORGANIC CHEMISTRY

Semi micro and Macro analysis , Separation and Identification of Four radicals - two acidic and two basic in a given mixture which may include any one interfering radical and/or combinations of radicals.

(B) ORGANIC CHEMISTRY

1.Laboratory techniques:

(i) Determination of melting point (0C)

Naphthalene 80-82 0C, Benzoic acid 121.5-1330C
Urea 132.5-1330C, Succinic acid 184.5-1850C
Cinnamic acid 132.5-1330C , Salicylic acid 157.5-1580C
Acetanilide 113.5-1140C, m-Dinitrobenzene 900C
p- Dichlorobenzene 52 0C ,Aspirin 1350C

(ii) Determination of boiling point

Ethanol 780C, cyclohexane 81.40C, toluence 110.60C, Benzene 800C

(iii)Mixed melting point determination

Urea-cinnamic acid mixture of various compositions(1:4,1:1,4:1)

(iv) Distillation

Simple distillation of ethanol-water using water condenser,
Distillation of nitrobenzene and aniline using air condenser

(v)Green Chemistry - Identification of Safety Symbols

2. Purification Methods

(i).Crystallization

Phthalic acid from hot water (using fluted filter paper and stemless funnel)
Acetanilide from boiling water,Naphthalene from ethanol,Benzoic acid from water

(ii)..Decolorisation & Crystallization using charcoal

Decolorisation of brown sugar (sucrose) with animal charcoal using gravity filtration,

Crystallization and decolorisation of impure naphthalene (100g of naphthalene mixed with 0.3 g of Congo red using 1 g decolorizing carbon) from ethanol.

(iii) **Sublimation (Simple and Vacuum)** Camphor, Naphthalene, phthalic acid and succinic acid.

3. Qualitative analysis

Identification of an organic compound through the functional group analysis, determination of melting point and preparation of suitable Derivatives

(C) PHYSICAL CHEMISTRY

(i) Chemical Kinetics

1. To determine the specific reaction rate of the hydrolysis of methyl acetate/ethyl acetate catalyzed by hydrogen ions at room temperature.
2. To study the effect of acid strength on the hydrolysis of an ester.
3. To compare the strengths of HCl and H₂SO₄ by studying the kinetics of hydrolysis of ethyl acetate.
4. To study kinetically the reaction of decomposition of iodide by H₂O₂.

(ii) Distribution Law

1. To study the distribution of iodine between water and CCl₄
2. To study the distribution of benzoic acid between benzene and water

(iii) Colloids

1. To prepare arsenious sulphide sol and compare the precipitating power of mono-, bi- and trivalent anions.

(iv) Viscosity & Surface Tension

1. To determine the percentage composition of given mixture (non interacting system) by viscosity method.
2. To determine the viscosity of amyl alcohol in water at different concentrations and calculate the viscosity of these compositions.
3. To determine the percentage composition of a given binary mixture by surface tension method (acetone & ethyl- ketone)

Spotting

Spotting will include Safety symbols, laboratory instruments, techniques etc. During examination in spotting there should be 5 spots related with instruments, techniques, safety

etc. from the syllabus ; time of spotting is 20 minutes and a separate copy shall be used for the purpose.

SCHEME OF EXAMINATION (B.Sc. Part-I) PRACTICAL

Max. Marks: 65 Min.Marks:24 Time 5 hours

1. INORGANIC CHEMISTRY

Analysis: One Exercise **15Marks**

2. ORGANIC CHEMISTRY

- 1.Lab Techniques: One experiment from any one techniques- **2.5Marks**
- 2-Purification Methods: One experiment from any one methods- **2.5Marks**
- 3.Qualitative Analysis: One Compound **10Marks**

3. PHYSICAL CHEMISTRY

Any One experiment **15 Marks**

4. SPOTTING 10 marks