

M.Sc.(Chem.) Semester - 2 (CBCS) Examination
April/May-2023 (NEW COURSE)
Analytical Chemistry(CORE)

Time: 2:30 Hours**Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

Q.1(A) Answer the following questions. (04)

1. Define accuracy and precision
2. Name the method validation parameters; also give examples of any two instruments where there is no scope of method validation.

Q.1(B) Answer the following question. (Any Two) (10)

1. If following data were obtained in Linearity studies on UV-Viz spectrophotometer, calculate whether data will pass or fail?

(Limit $R^2 = 0.9999 \pm 0.0005$)

Conc. (ppm)	2	4	6	8	10	12	14
Area	4.12	6.02	8.37	10.10	12.00	13.89	16.85

2. Discuss Robustness and Ruggedness with suitable example.
3. Calculate % RSD for following: 6.10, 5.24, 5.00, 5.77, 5.89, 6.25

Q.2(A) Answer the following question. (04)

What is pharmacopoeia? What type of information is shared within?

Q.2(B) Answer the following question. (Any Two) (10)

1. How to determine % Loss on Drying (LOD) for given sample?
2. Give the principle, reaction and limitations of Karl Fischer titration.
3. Define dissolution, discuss its role and factors affecting.

Q.3(A) Answer the following question. (04)

What are ionic liquids? Give properties and examples

Q.3(B) Answer the following question. (Any Two) (10)

1. Write a note on atom economy with suitable examples.
2. Explain following concepts of green chemistry with example
 - (I) Use of safer solvents
 - (II) Catalyst
3. Answer the following:
 - (I) Example of any one nonconventional green reaction.
 - (II) Merits and demerits of Microwave synthesis.

Q.4(A) Answer the following questions. (04)

1. Define patent, what is meant by 'New'? according to patent law
2. What is Prior Art?

Q.4(B) Answer the following question. (Any Two) (10)

1. Define Trade mark and discuss its types.
2. What is Patent Cooperation Treaty (PCT)? How it differs from Indian National Patent.
3. What are Intellectual Property Rights? Discuss its various class.

Q.5(A) Answer the following question. (04)

Discuss various phases of clinical trials.

Q.5(B) Answer the following question. (Any Two) (10)

1. Give a detailed account on cholesterol.
2. Name the various methods to determine hemoglobin and explain Sahli's method in detail.
3. Classify carbohydrates and discuss estimation of glucose in body fluids.
