

M.Sc.(Chem.) Semester - 2 (CBCS) Examination
March/April – 2024 (As Per Syllabus Year-2018)
Analytical Chemistry (CORE)

Time: 02:30 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 the following terms: a) Accuracy b) Precision
- (2) What is Limit of Detection (LOD)?

Q.1 (B) Answer any two questions out of three (10)

- (1) Apply paired t test on following two sets of data and find the value of t .

Set-1	2	4	6	8	10
Set-2	2.17	4.07	6.43	8.19	10.02

- (2) How would you find the preciseness of the proposed method? Give detailed account of precision study.
- (3) Find the standard deviation (SD) and % relative standard deviation (RSD) for following data: 38.8, 39.2, 38.0, 35.9, 38.2, 36.9

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

- (1) Name the various types of dissolution apparatus.
- (2) State the objectives of dissolution studies.

Q.2 (B) Answer any two questions out of three (10)

- (1) Write experimental procedure to check bulk and tap density of powder.
- (2) Discuss limit tests for Iron and arsenic with reaction.
- (3) Write a note on Karl Fischer (KF) titration for estimation of water.

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

- (1) Define green chemistry and state the characteristics of ideal synthesis.

Q.3 (B) Answer any two questions out of three (10)

- (1) Discuss renewable feed stocks with example.
- (2) Explain less hazardous chemical syntheses giving suitable example.
- (3) What are ionic liquids? give its introduction and examples.

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

- (1) Give brief introduction of Copy rights.

Q.4 (B) Answer any two questions out of three (10)

- (1) What are IP rights? discuss types of IP rights.
- (2) Give an account of prior art search and its data bases.
- (3) Define patent and introduce various steps for obtaining patent.

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

- (1) Discuss phases of clinical trials.

Q.5 (B) Answer any two questions out of three (10)

- (1) Write Cyanmethemoglobin Method for determine hemoglobin including its advantages and limitations.
- (2) Discuss quantitative determination of Glucose in body fluids.
- (3) Give a detailed account on cholesterols.
