

M.Sc.(Chem.) Semester - 2 (CBCS) Examination
March/April – 2024 (As Per Syllabus Year-2023)
Analytical Chemistry (Core)

Time: 02:30 Hours

Marks: 70

Instructions:

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

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- Q.1 (A) Answer the following questions (04)**
(1) Briefly introduce t test and its types with equation
- Q.1 (B) Answer any two questions out of three (10)**
(1) Define Precision and explain intra-day and Inter-day precision.
(2) Find the value of variance for following data: 4.0, 4.4, 4.5, 5.0, 4.9
(3) Discuss the process and significance of linearity studies.
- Q.2 (A) Answer the following questions (04)**
(1) What is patent and how long does it last (tenure of patent)?
(2) What are three basic needs of invention for filing patent?
- Q.2 (B) Answer any two questions out of three (10)**
(1) Discuss Geographical indications and its importance.
(2) Introduce copyrights and classes of works for copyright protection.
(3) Prepare flow chart covering major steps in patent filing and briefly explain about examination and publication of patent.
- Q.3 (A) Answer the following questions (04)**
(1) What is pharmacopoeia?
(2) What is disintegration?
- Q.3 (B) Answer any two questions out of three (10)**
(1) Introduce dissolution testing and state factors influencing dissolution. Draw symbolic representation of dissolution and oral drug delivery.
(2) Write process to determine Loss on Drying (LOD) of given compound.
(3) Discuss Karl Fischer titration for estimation of water.
- Q.4 (a) Answer the following question (04)**
(1) Discuss Aniline point with diagram.
- Q.4 (b) Answer any two questions out of three. (10)**
(1) Write a note on composition of petroleum based on element and structure.
(2) Explain in brief: (a) Noack volatility test (b) Kauri butanol value
(3) Explain flash and fire point of the petroleum products
- Q.5 (A) Answer the following questions (04)**
(1) Distinguish between dissolved oxygen (DO), chemical oxygen demand (COD) and biological oxygen demand (BOD)
- Q.5 (B) Answer any two questions out of three (10)**
(1) What is total hardness, give method to determine total hardness
(2) Discuss estimation of Potassium in water sample by flame photometry.
(3) Discuss the estimation of Boron from soil sample.
