

M.Sc.(Chem.) Semester - 1 (CBCS) Examination
Nov/Dec-2023 (SYLLABUS YEAR JUNE-2016)
ANALYTICAL CHEMISTRY (CORE)

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

1. Figures to the right indicate marks.
 2. All questions are compulsory.
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- Que.1 Answer the following. (Any Seven) (14)
- 1) Define analytical chemistry and state basic functions of analytical chemists.
 - 2) Draw the classification chart of wet chemical methods.
 - 3) Define accuracy and precision.
 - 4) Explain absolute error with equation.
 - 5) Write advantage of AAS over flame photometry.
 - 6) Explain types of shifts observed in UV-Vis Spectroscopy.
 - 7) What is acid value of oil?
 - 8) Give brief introduction of GLP.
 - 9) How will you identify adulteration of mineral oil?
 - 10) State Beer's law with equation.
- Que.2 Answer the following. (Any Two) (14)
- 1) Discuss physical and chemical properties of oil.
 - 2) Explain electro thermal atomization with figure.
 - 3) Write a note on solvents for non-aqueous titrations.
- Que.3 Answer the following. (14)
- 1) Discuss interferences in atomic absorption spectroscopy.
 - 2) Discuss the detection of adulteration in Rice bran oil.
- OR
- Que.3 Answer the following.
- 1) Introduce Chromophore and Auxochrome and give 3 examples of each.
 - 2) Discuss the acid-base theories with suitable example.
- Que.4 Answer the following. (Any Two) (14)
- 1) Write a note on redox titration with suitable example.
 - 2) Discuss the theory of luminance spectroscopy through excitation process in molecule.
 - 3) Draw the schematic diagram of AAS, give its principle and explain about its radiation source.
- Que.5 Answer the following. (Any Two) (14)
- 1) Define saponification value; how will you determine saponification value of oil?
 - 2) Explain determination of RMPK value and peroxide value in oil sample.
 - 3) Discuss classification and basic requirements of volumetric titrations.
 - 4) Explain different types of transitions in UV-Vis spectroscopy.
