

M.Sc.(Chem.) Semester - 1 (CBCS) Examination
Nov/Dec - 2022 [OLD COURSE]
ANALYTICAL CHEMISTRY (CORE)

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

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

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- Q.1 Answer the following: (Any Seven) 14**
- (a) Define: Analytical chemistry and write the objectives of analytical chemists.
 - (b) Define molality and molarity with equation.
 - (c) Give any two examples of mono, di and tri basic acids.
 - (d) Briefly explain types of solutions.
 - (e) Name the various regions associated in UV-Vis Spectroscopy.
 - (f) Define accuracy and precision.
 - (g) State Lambert's law with equation.
 - (h) What is absolute error? give its equation
 - (i) What is acid value of oil?
 - (j) Give brief account on rancidity in oil.
- Q.2 Answer the following: (Any two) 14**
- (a) Discuss redox titration with suitable example.
 - (b) Give general recommendations to achieve good laboratory practice.
 - (c) Write a note on solvents for non-aqueous titrations.
- Q.3 Answer the following: 14**
- (a) Explain determination of RMPK value and peroxide value in oil sample.
 - (b) Discuss the detection of adulteration in Rice bran oil.
- OR**
- Q.3 Answer the following:**
- (a) (i) Differentiate between emission and absorbance spectroscopy
(ii) Give an account of EMR
 - (b) Name the different atomization techniques for atomic absorption spectroscopy and explain any one in detail.
- Q.4 Answer the following: (Any Two) 14**
- (a) Write the procedure for determination of phenols and amines.
 - (b) Give the principle of Phosphorimetry and discuss its applications.
 - (c) Draw the schematic diagram of fluorometer and explain instrumentation.
- Q.5 Answer the following: (Any Two) 14**
- (a) Discuss the singlet and triplet state excitation factor affecting luminance spectroscopy
 - (b) Give an account on detection of adulterants in sesame oil.
 - (c) Discuss classification and basic requirements of volumetric titrations.
 - (d) Define saponification value; how will you determine saponification value of oil?
