

C. U. SHAH UNIVERSITY

Winter Examination-2020

Subject Name: Analytical Chemistry-I

Subject Code: 5SC01ACH1

Branch: M.Sc. (Chemistry)

Semester: 1

Date: 12/03/2021

Time: 11:00 To 02:00

Marks: 70

Instructions:

- (1) Use of Programmable calculator and any other electronic instrument is prohibited.
 - (2) Instructions written on main answer book are strictly to be obeyed.
 - (3) Draw neat diagrams and figures (if necessary) at right places.
 - (4) Assume suitable data if needed.
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SECTION – I

Q-1 Attempt the Following questions (07)

- a. What do you mean by Analytical Chemistry? **01**
- b. Give the name of any two ionization techniques used in mass spectrometry. **01**
- c. Define: Hybrid techniques **01**
- d. What do you mean by wavenumber? **01**
- e. Give the name of instrumental method for the analysis of protein content? **01**
- f. Define: Saponification Value **01**
- g. What do you mean by spectrum? **01**

Q-2 Attempt all questions (14)

- a. Explain the Lambert-Beer's Law in detail. **07**
- b. Explain instrumentation of single beam spectrophotometer with diagram and also write its advantages and disadvantages. **07**

OR

Q-2 Attempt all questions (14)

- a. Discuss in detail: The classical methods used in analytical chemistry. **07**
- b. Write a note on types of sources used in spectrophotometer. **07**

Q-3 Attempt all questions (14)

- a. Explain Kjeldahl's method for the determination of protein content. **07**
- b. Discuss in detail about determination methods for soluble and insoluble fiber content. **07**

OR

Q-3 a. Write a short note on adulteration of milk and milk product. 07
b. Explain nutrition labelling. 07



SECTION – II

- Q-4 Attempt the Following questions (07)**
- a. What do you mean by molarity? **01**
 - b. Define: Error **01**
 - c. What is called a monochromator? **01**
 - d. Define: Fluorescence. **01**
 - e. How many grams of Na_2CO_3 required to prepare 1.0 M, 1.0-liter solution? **01**
 - f. Define: Luminescence **01**
 - g. What do you mean by standardization? **01**

- Q-5 Attempt all questions (14)**
- a. Explain types of determinate error in detail. **07**
 - b. Explain primary and secondary standard with examples and characteristics. **07**

OR

- Q-5 Attempt all questions**
- a. Discuss the methods for minimization of error. **07**
 - b. Write a note on Law of Mass Action. **07**

- Q-6 Attempt all questions (14)**
- a. Discuss the instrumentation of atomic absorption spectroscopy. **07**
 - b. Explain the instrumentation of fluorimetry with necessary diagram. **07**

OR

- Q-6 Attempt all Questions**
- a. Explain the instrumentation of nephelometry with necessary diagram. **07**
 - b. Discuss the applications, advantages and disadvantages of atomic absorption spectroscopy. **07**

