



EEN-301004

Seat No. _____

M. Sc. (Sem. I) Examination

March - 2022

MSC1C104 : Analytical Chemistry

(New Course)

Time : 3 Hours]

[Total Marks : 70

Instructions :

- (1) Each questions carries 14 marks.
- (2) All questions are compulsory.

1 Answer the following :

- (A) What is good laboratory practice ? Discuss its significance in Quality assurance. **7**

OR

- (A) Describe in brief the scope of analytical science and its literature. **7**
- (B) Discuss in brief ways to express accuracy and precision and explain types of error. **7**

OR

- (B) Write a short note on control chart, confidence interval and confidence limits. **7**

2 Answer the following :

- (A) What is sample preparation and sampling ? Discuss the general steps involved in chemical analysis. **7**

OR

- (A) Discuss in detail correlation co-efficient and calibration curve. **7**
- (B) Explain the brief the procedure to find the best straight line using least square regression. **7**

OR

- (B) Write a brief note on the use of internal standard and standard addition technique. **7**

- 3 Answer the following : 7
- (A) Explain different components of uv-visible spectrophotometer. 7
- OR**
- (A) Write a brief note on circular dichroism and optical rotator dispersion. 7
- (B) Derive Lambert Beer's law with limitation. 7
- OR**
- (B) Write a short note on Ringbom plot. 7
- 4 Answer the following : 7
- (A) How will you measure an equilibrium constant using scatchard plot ? 7
- OR**
- (A) Illustrate various photometric titration curves and its advantages. 7
- (B) Discuss the Job's method of continuous variation for determining the composition of a complex. 7
- OR**
- (B) Explain the analysis of a mixture with resolved and unresolved spectra. 7
- 5 Answer in brief : (one mark each) 14
- (1) Define : Significant figures.
 - (2) Define : Mole fraction.
 - (3) Define : Auxochrome and chromophore.
 - (4) What is the wavelength region for visible radiation ?
 - (5) What are quality control charts ?
 - (6) Give use of student t-test.
 - (7) Define limit of quantization.
 - (8) What is derivative spectrophotometry ?
 - (9) Explain : Plane-polarized light.
 - (10) Define normality.
 - (11) What is the function of monochromator ?
 - (12) Give different units of wavelength.
 - (13) Explain : Vibrational spectra.
 - (14) Give relation between velocity of light, frequency, wavelength and energy.