



ST-301004

Seat No. _____

M. Sc. (Sem. I) Examination

February - 2021

MSC1C104 : Analytical Chemistry
(New Course)

Time : 2 Hours]

[Total Marks : 50

Insruction:-

- (1) Answer any two question from eight question
- (2) Q. 9 is compulsory.

1 Answer the following (18)

- (1) Describe qualitative and quantitative analysis in analytical science with a suitable example.
- (2) Write a brief note on Q-test. From the Following data predict the acceptance or rejection Of the questionable value. If any 0.189, 0.167, 0.187, 0.183, 0.186, 0.182, 0.181, 0.184, 0.181, 0.177.
(The tabulated value for rejection at 95% confidence is 0.466)

2 Answer the following (18)

- (1) Explain the important of quality assurance and quality control in GLP.
- (2) Explain the role of F-test and Q-test in statistical.

3 Answer the following (18)

- (1) Explain in brief the procedure to find the best straight line using least square regression.
- (2) Write a brief note on correlation co-efficient and calibration curve.

4 Answer the following (18)

- (1) Discuss the general steps involved in chemical analysis.
- (2) Describe the important of standard addition technique and use of internal standard in chemical analysis.

5 Answer the following (18)

- (1) Explain different components of UV-Visible spectrophotometer.
- (2) Write a short note on Ringbom plot.

6 Answer the following (18)

- (1) Write a short note on Derivative spectrophotometry
- (2) Derive Lambert-Beer's law in technical analysis and state its limitations.

7 Answer the following

(18)

- (1) Explain the analysis of a mixture with resolved and unresolved spectra.
- (2) How potentiometry titration is helpful in locating line the equivalence point?
And discuss its Type.

8 Answer the following

(18)

- (1) Write a short note on the Job's method of continuous variation.
- (2) Explain the analysis of a mixture when
 - (1)The individual spectra Overlap and
 - (2)The individual spectra are well resolved.

9 Answer in brief. (1 mark each)

(14)

- (1) What do you understand by confidence limit?
- (2) What are quality control charts?
- (3) Define mole fraction.
- (4) Give significant figures: 0.060700
- (5) Give names of the any two validation parameters.
- (6) Define deviation and standard deviation.
- (7) Define Normality
- (8) What is chromophore ? Give one example. *β-carotene*
- (9) Give the wavelength region of UV- radiation.
- (10) Where is monochromator placed in a spectrophotometer before or after the sample.
- (11) Write the unit of molar absorptivity and absorbance.
- (12) State any two application of spectrophotometry.
- (13) Significance of Ringbom plot.
- (14) Give the relation between absorbance and transmittance