

Roll No. :

Total No. of Questions : 11]

[Total No. of Printed Pages : 3

BPF-2202

M.Sc. (Final) Examination, 2022

CHEMISTRY

Paper - X (A)

(Group-D CH-509)

(Analytical Chemistry)

Time : 3 Hours]

[Maximum Marks : 75

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section-B

(Marks : 5 × 5 = 25)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **5** marks.

Section-C

(Marks : 10 × 3 = 30)

Note :- Answer any *three* questions out of five (Answer limit **500** words). Each question carries **10** marks.

Section-A

1. (i) What do you understand by signal to noise ratio ?
- (ii) What is process control in laboratory ?

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- (iii) Write basic principle of FT-IR.
- (iv) What is Collimator ?
- (v) What are Fluorescent Indicators ?
- (vi) What are Photometric Titrations ?
- (vii) What is meant by development of chromatogram ?
- (viii) How solvents are selected in thin layer chromatography ?
- (ix) What is meant by white waves ?
- (x) Name *two* water proofing agents added to make water proof cement.

Section-B

2. Explain sensitivity and detection limit.

Or

Write a short note on interfacing computers in instruments.

3. Explain ionisation methods in mass-spectrometry.

Or

Write applications of diffraction method to complexes.

4. Write differences between Atomic absorption spectroscopy and Flame emission spectroscopy.

Or

Write basic principle and one application of Nephelometry.

5. Write a short note on column efficiency and selectivity [HPLC].

Or

Explain any *one* method of Ion exchange techniques.

6. What are Refractories ? Give an account of any *three* characteristics of good refractory material.

Or

Write a short note on Raw materials used in white wares and potteries.

Section–C

7. Write a note on industrial process analyzers.
8. Explain double focussing mass-spectrometer.
9. Explain instrumentation for atomic absorption spectroscopy.
10. Write a note on Gas Chromatography.
11. Write a note on chemical characteristics of raw materials of alkali and alkaline earth elements.