

Roll No. :

Total No. of Questions : 11]

[Total No. of Printed Pages : 3

BFMS-426

M.Sc. (Final) Examination, 2023

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) Define Accuracy.
- (ii) Write Detection limits.

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- (iii) Write basic feature of NIR.
- (iv) Write *two* applications of FTIR.
- (v) Write principle of AAS.
- (vi) What is the maximum temperature in flame atomiser ?
- (vii) What is Ion Exchange Chromatography (IEC) ?
- (viii) Define R_M Valve.
- (ix) How is Thermal Data useful ?
- (x) State temperature changes in Malonic Acid.

Section-B

- 2. Write short notes on the following :
 - (a) Automatic chemical Analyzer.
 - (b) Interfacing computers in Instruments.

Or

- 2. Write short notes on the following :
 - (a) Industrial Process Analyzers.
 - (b) C, H, N, O-Analyzer
- 3. Explain instrumentation and application of Raman Spectroscopy.

Or

Explain instrumentation and application of X-rays spectroscopy.

- 4. Explain differential and derivative spectroscopy.

Or

Explain Basic Principles, Instrumentations and applications of Fluorimetry.

- 5. Give classification and important application of chromatography.

Or

Differentiate GC and GLC in detail.

6. Write notes on the following :

- (a) TGA and DTA
- (b) Liquid chromatography

Or

Explain classification of minerals based on their chemical composition.

Section–C

- 7. Explain computer aided analysis.
- 8. Explain in detail electron microscopy and sample separation.
- 9. Explain AAS and FES in detail.
- 10. Explain paper and ion exchange chromatography.
- 11. Give study of Raw materials used in glass, potteries and cement.