PAPER-I- SEPARATION METHODS.docx

PAPER -II-Quality Control and Traditional Methods of Analysis-I-1.docx

PAPER III-APPLIED ANALYSIS-I.docx

PAPER-IV- INSTRUMENTATION METHODS OF ANALYSIS-I.docx

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III Semester Model Question paper

PAPER-I: SEPARATION METHODS-I

(With effect from 2016-2017 admitted Batch)

Time 3 hours Answer **ALL** Questions Max Marks: 75

PART-A

All questions carry equal marks

(4x15=60 Marks)

1. a) Write a short note on the following.

i) Different Chromatographic methods of development. (10 M)

ii) Frontal analysis. (5 M)

Or

b) Write about the Principles of Chromatography and write about its applications in qualitative and quantitative analysis (15 M)

2. a) Write a short note about the following

i) Liquid Chromatography with detectors and applications. (10 M)

ii) Adsorption Isotherms (5 M)

Or

b) Write about the Principle and applications of Gel Exclusion Chromatography and Gel Filtration Chromatography. (15 M)

3. a) Write about the theory and instrumentation of GaS Chromatography. Write the applications of Gas Chromatography (15 M)

Or

b) Write a short note on the following

i) Structure of Zeolites ii) Affinity chromatography iii) GCMS

(15 M)

4 a) Write about the principle, instrumentation and applications of High performance liquid Chromatography

Or

b) What is LCMS? Write the instrumentation of LCMS and its application for drug analysis.

SECTION-B (5 x 3 = 15 M)

ANSWER ANY FIVE QUETIONS

3. i) Write about zone spreading in chromatography.

(ii) Write about What is Van deempter equation.

iii) Write about column chromatography principle and use.

iv) Write about capillary electrophoresis.

v) Write about the thermal conductivity detector in Gas chromatography.
vi) Write about the principle of counter current chromatography.
vii) Write the sample preparation method for LCMS.
viii) Write about fluorescence detector.

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III Semester Model Question paper

PAPER-II: QUALITY CONTROL AND TRADITIONAL METHODS OF ANALYSIS-I

(With effect from 2016-2017 admitted Batch)

Time 3 hours Answer **ALL** Questions Max Marks: 75

PART-A

All questions carry equal marks

(4x15=60 Marks)

1. a) Write a short note on the following.

i) Principles of Ruggedness test ii) Control Charts iii) Accuracy and Precision

Or

b)) Write a short note about the following

i) F test and T test ii) GLP status in India iii) Process Control tools

2. a) Write a short note about the following

i) Importance of decomposition techniques in analysis

ii) Recrystallization methods and application of recrystallization

Or

b) Write about the following

i) Sintering process and principle of microwave techniqueii) Fusion with alkali carbonates and sodium peroxide

3. a) Write about the analytical chemistry of inorganic system Mn(III), Mn (VII), and Ce (IV)

Or

b) Write a short note on the following

i) Species responsible for the oxidation properties in oxidation systems

ii) Requirements for the selection of oxidants

4 a) Write about the functional group analysis of Thiol, Phenolic hydroxyl and enediol functional groups.

Or

b) Write about the functional group analysis of aldehydes, ketones and methoxy functional groups.

SECTION-B (5 x 3 = 15 M)

ANSWER ANY FIVE QUESTIONS

5. i) Write about Youden plot

Ii) Write about propagation of errors

iii) Write the principle of decomposition

iv) Write the principle of recrystallization

v) Write about the principle of oxidants in analytical chemistry

vi) Write about the applications of oxidants in analysis

vii) How can you analize tertiary amine?

viii) How can you analyze oefinic functional group

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III Semester Model Question paper

PAPER-III: APPLIED ANALYSIS-I

(With effect from 2016-2017 admitted Batch)

Time 3 hours Answer **ALL** Questions Max Marks: 75

PART-A

All questions carry equal marks

(4x15=60 Marks)

1. a) Write about the various chemical methods for the effective separation of the constituents in the complex materials.

Or

b) Write a short note about the following

i) Analysis of Bauxite ore ii) Analysis of Chromite ore

2. a) Write the analysis of steel for C, Si ,S, P, Mn, Ni, Cr, Mg.

Or

b) Write the analysis of refractory materials: fire clay, flour spar and magnesite

Or

b) Write about the following

i) Sintering process and principle of microwave technique ii) Fusion with alkali carbonates and sodium peroxide

3. a) Write about the chemical analysis of cement

Or

b) Write about the following

i) Saponification number ii) iodine number and acid number

4 a) Write about the analytical methods for the determination of following ions:

i) NO_3^- ii) Ca^{2+} iii) Hg^{2+} iv) Fe^{2}+ and Fe^{3+} v) SO_4^{2-}

Or

b) Write about the following

i) Determination of dissolved oxygen ii) Chemical Oxygen Demand

SECTION-B (5 x 3 = 15 M)

ANSWER ANY FIVE QUESTIONS

5. i) Write about Iron ore constituents

Ii) Write about the constituents in the analysis of manganese ore

iii) Write the analysis of lime stone

iv) Write the analysis of dolomite

v) Write about free caustic alkali

vi) Write about total lead and lead chromate in the analysis of paints

vii) What is Biochemical oxygen Demand

viii) Write about the types of water pollutants

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III Semester Model Question paper

Paper- IV: INSTRUMENTATION METHODS OF ANALYSIS-I

(With effect from 2016-2017 admitted Batch)

Time 3 hours Answer **ALL** Questions Max Marks: 75

PART-A

All questions carry equal marks

(4x15=60 Marks)

1. a) Write a short note on the following.

i) Beer's Law

ii) simultaneous determinations of dichromate and permanganate in a mixture.

Or

b) Write the theory of fluorescence. Write the application of applications of fluorescence and phosphorescence with reference to $Al^{3+,}$ chromium salts.

2. a) Write about the instrumentation of Infrared spectroscopy.

Or

b) i) Write the differences between Raman spectra and IR spectra

ii) Draw the Raman spectra of CO and H_2O

3. a) Write about the following

i) Chemical Shift ii) Spin Spin splitting iii) Fast Chemical reactions

Or

b) Write a short note on the following

i) Hyper fine splitting and Krammers degeneracy ii) Difference between ESR and NMR spectra

4 a) Write about the principle, instrumentation and applications of Mass Spectroscopy.

Or

b) Write about the principle of X-ray spectroscopy. Write about the chemical analysis by using X-ray spectrometer.

SECTION-B (5 x 3 = 15 M)

ANSWER ANY FIVE QUETIONS

i) Write the principle of diode array spectrophotometers.
ii) Write about quenching.
Iii) Write the principle of Fourier transform IR.
iv) What is Raman Effect?
v) Write about the Shift reagents.
vi) Write about the g value in ESR spectroscopy.
vii) Write the utility of mass spectroscopy in qualitative analysis.
viii) Write about Matrix effect.