

**Master of Science in Analytical Chemistry Examination:
November/December - 2022**

Day & Date	Semester	Subject Name	Time	Code	Marks
Thursday 05-02-2023	I (Fresh Repeater)	Fundamental of Analytical Chemistry	11:00 AM To 01:00 PM	102104	50

Instructions: All Questions are compulsory.

Q.1 Attempt any five:

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- Define Analytical Chemistry.
- Explain the term Chemometrics.
- What is gross sample and sub sample?
- Give any two applications of TLC
- Give any two differences between TLC and HPTLC
- What is Mode?
- What is Accuracy and Precision?

Q.2 Attempt any two.

10

- Describe scope and functions of Analytical Chemistry.
- What is Chemometrics? Discuss the importance of Chemometrics tools.
- What is the purpose of Sampling? Describe the method of sampling of immiscible liquid and flowing liquid.

Q.3 Attempt any two.

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- How does a diphenyl amine indicator behave as an indicator in Redox titration? What is the function of H_3PO_4 in such titrations?
- Discuss the Volhard method of determining the end point in Argentometric titration.
- Explain detection of end point in precipitation titration.

Q.4 Attempt any two.

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- Write short note on Batch Extraction and Continuous Extraction.
- With a neat labelled diagram, explain Soxhlet Extraction.
- What is the principle involved in paper chromatography? and explain the two types of papers used in it? Write its application.

Q.5 Attempt any two.

- What is central Tendency? What are the measures of central tendency? Discuss each in short.
- What are systematic and Random errors?
- Describe the various sources of determinate errors.

**Master of Science in Analytical Chemistry Examination:
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Day & Date	Semester	Subject Name	Time	Code	Marks
Friday 09-12-2022	I (Fresh/ Repeater)	Food & Biochemical Analysis	11:00 AM To 01:00 PM	102102	50

- Instructions: 1) All Questions are compulsory to attempt.
2) Attempt any two Questions from Q2, 3, 4 & 5.
3) Give well labelled diagram wherever required.

Q.1 Attempt any five of the following objectives question:

- What is quality control?
- What is safe food?
- Write the role of designated officer.
- Write natural colors with examples.
- Write the benefits of cochineal extract.
- Write 4 differences between serum and plasma.
- What is sputum?

10

Q.2 Attempt any two of the following.

- Explain food Safety and Standards Act 2006.
- Explain the characteristics of food preservatives.
- Write a note on Antioxidants, Emulsifiers and stabilizers, Artificial sweetening agents.

10

Q.3 Attempt any two of the following.

- What are the Common Adulterants found in food and Tests?
- Explain Classification of food colors.
- What are the advantages and disadvantages and industry of natural colour?

10

Q.4 Attempt any two of the following.

- What are the Substance Glutamic-Oxaloacetic Transaminase Test (SGOT) and Substance Glutamate Pyruvate Transaminase (SGPT)?
- Explain liver profile with a neat labelled diagram.
- Explain renal profile with a neat labelled diagram.

10

Q.5 Attempt any two of the following.

- Write a note on coffee, tea, and honey with test.
- Write a note on eggs, meat, and vegetables with test.
- Analysis of Cheese, Soft drinks, Alcoholic beverages.

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**Master of Science in Analytical Chemistry Examination:
April/May - 2023**

Day & Date	Semester	Subject Name	Time	Code	Marks
Thursday 04-05-2023	V (Repeater)	Fundamental of Analysis Chemistry	02:00 PM To 04:00 PM	102104	50

Instructions: 1) All Questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 Attempt any five of the following objectives question: 10

- 1) What do you mean by sampling unit and increment?
- 2) Name the two types of Sampling.
- 3) What is LOD and LOQ?
- 4) What is Molar Solution?
- 5) What is R_f Value?
- 6) What is central tendency?
- 7) Give any two applications of HPTLC.

Q.2 Attempt any two of the following. 10

- a) Define Analytical Chemistry and Describe the branches of it. Mention its applications.
- b) Write short note on:
 - 1) Coning and Quartering Method
 - 2) Sampling of Gases
- c) What is sampling? Explain sampling of Liquids.

Q.3 Attempt any two of the following. 10

- a) What are the different types of solvent used in non-aqueous titration? Give suitable example of each type and what are the benefits of titration in non-aqueous solvent?
- b) What are primary and secondary standard? Why Mohr's salt is preferred as primary standard over Ferrous sulphate in volumetric analysis.
- c) Write short note on
 - 1) Molar solution
 - 2) Permanganometric titration

Q.4 Attempt any two of the following. 10

- a) Discuss the principle and applications of TLC, show how it is different from HPTLC.
- b) Explain HPTLC.
- c) Explain Solvent Extraction.

**Master of Science in Analytical Chemistry Examination:
April/May- 2023**

Day & Date	Semester	Subject Name	Time	Code	Marks
Saturday 13-05-2023	PM I (Repeater)	Drug Laws and Packaging	02:00 PM To 04:00 PM	102104	50

Instructions: All questions are Compulsory.

Q.1 Attempt any Five of the following

- a) What is FSSAI 2006.
- b) Write down advantages & disadvantages of metal packaging.
- c) Role of PCI.
- d) What are the type of monograph.
- e) Write the salient features of Indian pharmacopoeia -2018.
- f) Which products required BIS certification?
- g) Write down components of an ISI mark.
- i) Write down advantages & disadvantages of glass packaging.

10

Q.2 Attempt any Two of the following

- a) Write a note on Drug inspector
 - a) Power
 - b) Duties
- b) Write note on an administration process of drug and cosmetics act 1940.
- c) Write note on Pharmaceutical Act 1948

10

Q.3 Attempt any Two of the following

- a) Write short note on B.P. Pharmacopoeia
- b) Write about I.P and its significance features.
- c) Write note on
 - i) Codex and its importance
 - ii) European Pharmacopoeia

10

Q.4 Attempt any Two of the following

- a) Write about ISO and its importance.
- b) Write a note on AGMARK
- c) Write a note on ISI Certificate

10

Q.5 Attempt any Two of the following

- a) Write a note on GLP
- b) Write a note on Plastic Packaging
- c) What is GMP philosophy?

10

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Instructions: All questions are Compulsory.

Q.1 Attempt any Five of the following

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- a) What is FSSAI 2006.
- b) Write down advantages & disadvantages of metal packaging.
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Master of Science in Analytical Chemistry Examination:
April/May 2023

Day & Date	Semester	Subject Name	Time	Code	Marks
Tuesday 09-05-2023	I (Repeater)	Food & Biochemical Analysis	02:00 PM To 04:00 PM	102102	50

Instruction: 1) All questions are compulsory.
2) All question carry equal marks.
3. Give well labelled diagram wherever required.

Q.1 Attempt any five of the following objectives question:

- Write 4 functions of the liver?
- Write any two urine tests?
- Write about Indian industries which produce natural colour?
- Write analysis of milk and milk products?
- What are the eggs?
- What is the role of agmark?
- Write the function of BIS?

10

Q.2 Attempt any two of the following:

- Write a note on Antioxidants, Emulsifiers and stabilizers, Artificial sweetening agents.
- Explain food Safety and Standards Act 2006?
- Explain the characteristics of food preservatives?

10

Q.3 Attempt any two of the following:

- Explain Classification of food colors natural colour and synthetic colour?
- What are the advantages and disadvantages and industry of natural colour?
- What are the Common Adulterants found in food and Tests?

10

Q.4 Attempt any two of the following:

- Substance Glutamate Pyruvate Transaminase (SGPT) and sputum?
- Explain liver profile with a neat labelled diagram?
- Explain thyroid profile with a neat labelled diagram?

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Q.5 Attempt any two of the following:

- Write a note on butter, cheese and biscuits with test.
- Write a note on fish, confectionery, and vegetables with test?
- Analysis of bread, wheat and Alcoholic beverages.

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Master of Science in Analytical Chemistry Examination
April/May 2023

Day & Date	Semester	Subject Name	Time	Code	Marks
Thursday 11-05-2023	I (Repeater)	Environmental Science	02:00 PM To 04:00 PM	102103	50

Instruction: 1) All questions are compulsory.
2) All questions carry equal marks.

Q.1 Attempt any five of the following objectives question:

- Name two methods for water pollution control.
- Give two air pollution resulting in ozone depletion.
- Describe term Eutrophication.
- Write in short about ionizing-radiation.
- Name any two toxic heavy metals.
- Disease caused by water pollution.
- What are the types of radiation?

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Q.2 Attempt any two of the following.

- Give source of water pollution and problem related to Industrial area.
- Give classification of water pollutants and explain industrial water pollution.
- What are the sources of air pollution? Explain global air pollution problems.

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Q.3 Attempt any two of the following:

- Write short note on -
 - Electrostatic precipitation
 - Cyclonic separation
- Write short note on -
 - Wet and dry scrubbers
 - Filters
 - Gravity
- Explain Aeration of water

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Q.4 Attempt any two of the following:

- Explain soil pollution and its effect on ecosystem.
- What are the effects if Pesticide residue on Life?
- Explain
 - Carbon Compounds
 - Nitrogen Compounds
 - Phosphorous Compounds

10

Q.5 Attempt any two of the following:

- a) What is Radiation and describe types of radiation.
- b) Write short note on -
 - i) Radioactive Fallout
 - ii) Nuclear Fallout
- c) Explain in brief about Non-ionizing radiation and its effects on life.

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