

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

Day & Date	Semester	Subject Name	Time	Code	Marks
Wednesday 03-05-2023	II (Fresh/ Repeater)	Electro Analytical & Spectroscopic Methods	11:00 AM To 01:00 PM	202101	50

Instruction: All Question are Compulsory.

Q.1 Attempt any five of the following

10

- a) Define polarogram and polarography. –
- b) Write informative note on nephelometry.
- c) Explain singlet state and triplet state
- d) Characteristic of burner
- e) what is spectroscopic methods?
- f) Who invented polarographic method?
- g) Explain the term of migration current.

Q.2 Attempt any TWO of the following:

10

- a) Write different type of indicator electrode used in acid base titration. Describe working electrode and construction of any one of them.
- b) write short note on
 - 1) silver-silver electrode
 - 2) bio-catalytic electrode
- c) Define the term electrode potential? Derive Nernst equation

Q.3 Attempt any TWO of the following:

10

- a) State Ilkovic eqⁿ and Explain the term involved in it? How does it form basis of quantitative Polarographic Analysis.
- b) Write note on anodic and cathodic stripping voltammetry with application
- c) Explain the Graph of typical polarogram with application

Q.4 Attempt any TWO of the following:

10

- a) Discuss the calibration curve method and standard addition method
- b) Explain the importance of finger print region in IR spectroscopy
- c) Compare the technique of flame photometry and AAS.

Q.5 Attempt any TWO of the following:

10

- a) explain the principle and instrumentation of Phosphoresces
- b) Difference between fluorescence and phosphorescence. Explain excitation monochromator and emission mono-chromator
- c) explain instrumentation of Nephelometry analysis with application

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Day & Date	Semester	Subject Name	Time	Code	Marks
Saturday 06-05-2023	II (Fresh/ Repeater)	Pharmaceutical Analysis	11:00 AM To 01:00 PM	202102	50

Instructions: All questions are Compulsory.

- Q.1 Attempt any Five of the following** **10**
- What is an assay?
 - What is a limit test and its uses?
 - Give the types of tablet?
 - What is ointment?
 - Give an example of powdered dosage form of a drug.
 - Types of dosage formulation.
 - What is HPLC?
- Q.2 Attempt any Two of the following** **10**
- Explain solid dosage form in detail
 - Explain Different types of Oral Solutions?
 - Write a short note on Controlled Release Drug Delivery System.
- Q.3 Attempt any Two of the following** **10**
- Explain Indian Pharmacopoeia.
 - Explain the limit test of chloride in detail
 - Explain the limit test of lead in detail
- Q.4 Attempt any Two of the following** **10**
- What are laxatives? Briefly explain its types.
 - Explain disintegrated and dissolution in detail.
 - Write a note on Vitamin C
- Q.5 Attempt any Two of the following** **10**
- Explain Quality Control in detail.
 - Explain Concept of TQM.
 - Explain documentation and its purpose.

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Day & Date	Semester	Subject Name	Time	Code	Marks
Monday 08-05-2023	II (Fresh/ Repeater)	Cosmetics Formulation & QC	11:00 AM To 01:00 PM	202103	50

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

- Q.1 Attempt any five of the following objective questions. 10**
- 1) Write names of any two floral fragrance used in powder formulations.
 - 2) Name any two colours obtained from natural plant resources.
 - 3) Name the part of the plant from which vanilla & pine fragrance obtained.
 - 4) Give chemical formula of anyone saturated fatty acids used in cosmetics.
 - 5) Name the film forming material used in nail enamel. 10
 - 6) Give two advantages of plastic as packaging material in cosmetics.
 - 7) Name any two aniline colours used in cosmetics.
- Q.2 Attempt any Two of the following. 10**
- 1) Explain mixing and moulding process used in cosmetics formulation.
 - 2) Write a note on oils fats and waxes used in cosmetics.
 - 3) Write a note on perfumes prepared from synthetic materials and its limitations.
- Q.3 Attempt any Two of the following. 10**
- 1) Discuss various formulations of skin creams.
 - 2) Discuss hair grooming reparations in short.
 - 3) Write a note on any two formulations of manicure preparations.
- Q.4 Attempt any Two of the following 10**
- 1) Write an informative note on herbal products for skin.
 - 2) Give formulation of herbal creams.
 - 3) Explain Patch and Photo patch test.
- Q.5 Attempt any Two of the following. 10**
- 1) Write a note on quality control process used for finished products.
 - 2) Explain various limit tests for raw materials.
 - 3) Give tests for analysis of Nail enamel.

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Day & Date	Semester	Subject Name	Time	Code	Marks
Wednesday 10-05-2023	II (Fresh/ Repeater)	Research Methodology	11:00 AM To 01:00 PM	202104	50

Instruction: All Question are Compulsory.

- Q.1 Attempt any five** **10**
- Give the uses of filtration in labs
 - Define PPE
 - Define Solubility
 - Give the full form of SPSS
 - Give one use of liquified petroleum gas
 - Define aerosols
 - Give two uses of wearing face mask in labs
- Q.2 Attempt any TWO of the following:** **10**
- Define biomedical wastes and explain how it is treated
 - Give general health and safety measures to be taken in industries
 - Give importance of data collection in research methodology
- Q.3 Attempt any TWO of the following:** **10**
- Explain fire emergency and fire safety methods
 - How should radioactive waste be disposed off?
 - How should one handle gas cylinders to prevent them from blasting?
- Q.4 Attempt any TWO of the following:** **10**
- Explain chemical spills & how to prevent them
 - Explain the importance of discarding broken glassware in the laboratory
 - How should chemicals be handled while being transported
- Q.5 Attempt any TWO of the following:** **10**
- Explain in detail about the Bhopal gas tragedy
 - Explain bio-hazard spill & how to prevent it
 - Give account of Chernobyl disaster