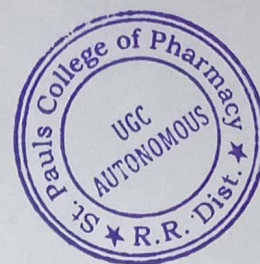


# St. Pauls College of Pharmacy

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## M.Pharmacy (Pharmaceutical Analysis) I Semester (PCI) (Main) Examination Feb/March 2024

### Subject: FOOD ANALYSIS-MPA104T

Time: 3 Hours

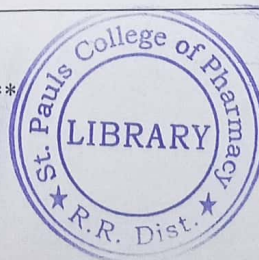
Max.Marks: 75

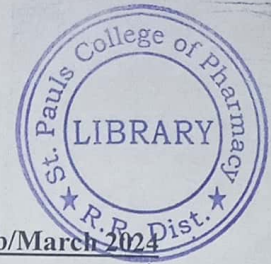
### PART- A

Note: Answer any FIVE questions. All questions carry equal marks.

| Q.No. | Question   | Marks | CO  | BL |
|-------|--|-------|-----|----|
| 1     | a) Outline the general methods used to analyze proteins and amino acids in food.                                 | 5     | 2   | 1  |
|       | b) Discuss in detail various colorimetric methods of analysing proteins and aminoacids.                          | 10    | 2   | 2  |
| 2     | a) Recall the general methods used for the analysis of food spoilage due to lipid oxidation.                     | 7     | 1   | 1  |
|       | b) Describe any three tests used to evaluate oxidative stability of lipids in foods.                             | 8     | 2   | 2  |
| 3     | a) Describe the methods of detection for natural pigments.   | 8     | 3   | 2  |
|       | b) Differentiate between permitted and non-permitted synthetic dyes and their usage.                             | 7     | 3   | 2  |
| 4     | a) Propose a method for detecting the presence of water as an adulterant in milk.                                | 5     | 3   | 3  |
|       | b) Compare and contrast the analytical techniques used for testing the quality of liquid milk and powdered milk. | 10    | 3   | 2  |
| 5     | a) Given a scenario, recommend a suitable analytical technique for detecting organochlorine pesticides.          | 7     | 5   | 3  |
|       | b) Evaluate the environmental impact of organophosphorus pesticides compared to organochlorine pesticides.       | 8     | 5   | 4  |
| 6     | a) Evaluate the role of FDA in responding to food safety incidents.  | 6     | 6   | 5  |
|       | b) Design a quality control checklist based on BIS standards for a food manufacturing unit.                      | 9     | 6   | 6  |
| 7     | a) Recall the specific methods used to analyze Mono- and Oligosaccharides in food.                               | 7     | 4   | 1  |
|       | b) Explain the concepts of protein separation with special emphasis on PAGE.                                     | 8     | 2   | 2  |
| 8     | a) Name the principles involved in the chemical assay of B-series vitamins.                                      | 7     | 2   | 1  |
|       | b) Comprehend the role of chromatographic techniques in the analysis of pesticides.                              | 8     | 4,5 | 2  |

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**M.Pharmacy (Ph.Analysis) I Semester (PCI) (Main) Examination Feb/March 2024**

**Subject: Pharmaceutical Validation-MPA103T**

**Time: 3 Hours**

**Max.Marks: 75**

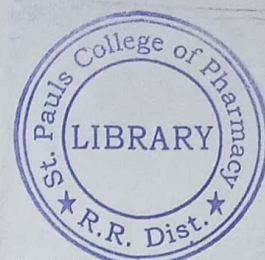
**PART- A**

**Note: Answer any FIVE questions. All questions carry equal marks.**

| Q.No. | Question   | Marks | CO | BL |
|-------|--|-------|----|----|
| 1     | a) Define qualification and explain the different phases of qualification process of analytical Equipment's. | 8     | 1  | 1  |
|       | b) Define validation and explain the types of process validation.  | 7     | 1  | 1  |
| 2     | a) Explain the procedure involved in qualification and calibration of HPTLC.                                 | 8     | 2  | 3  |
|       | b) Explain the calibration procedure of glassware used in analytical work.                                   | 7     | 2  | 3  |
| 3     | a) Explain about Sampling methods for cleaning validation.   | 8     | 3  | 2  |
|       | b) Write short notes on Compressed air and nitrogen.   | 7     | 3  | 3  |
| 4     | a) Describe the Method Validation parameters for new Analytical method.                                      | 10    | 4  | 2  |
|       | b) Write short notes on GAMP 5.  | 5     | 4  | 2  |
| 5     | a) What is an intellectual property right? Explain about different types of IPR.                             | 8     | 5  | 5  |
|       | b) Elaborate the role of Intellectual property in pharmaceutical industry.                                   | 7     | 5  | 5  |
| 6     | a) Write about PCT and WIPO.   | 8     | 5  | 2  |
|       | b) Write short notes on electronic records.  | 7     | 4  | 2  |
| 7     | a) Discuss about pharmaceutical water system validation.   | 10    | 3  | 3  |
|       | b) Explain the procedure involved in qualification and calibration of FTIR.                                  | 5     | 2  | 3  |
| 8     | a) Outline factory acceptance test and site acceptance test?   | 8     | 1  | 4  |
|       | b) Explain the steps involved in preparation of validation master plan (VMP).                                | 7     | 1  | 4  |

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**M.Pharmacy (Common to all) I Semester (PCI) (Main) Examination Feb/March 2024**

**Subject: Modern Pharmaceutical Analytical Techniques – MPL101T**

**Time: 3 Hours**

**Max.Marks: 75**

**PART- A**

**Note: Answer any FIVE questions. All questions carry equal marks.**

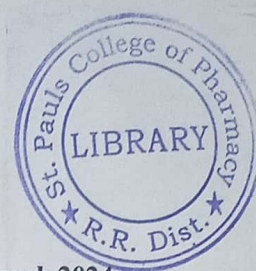
| Q.No. | Question   | Marks | CO | BL |
|-------|--|-------|----|----|
| 1     | a) State short note on Beers-Lambert's Law   | 3     | 1  | 1  |
|       | b) Write the factors effecting vibrational frequencies and instrumentation of FT-IR    | 12    | 1  | 3  |
| 2     | a) What is chemical shift and write the factors effecting chemical shift               | 10    | 2  | 5  |
|       | b) Explain coupling constant and its significance in NMR                               | 5     | 2  | 2  |
| 3     | a) Write in detail different ions formed in Mass Spectrometry and their significance   | 5     | 3  | 3  |
|       | b) Explain in detail different ionization techniques of Mass Spectrometry              | 10    | 3  | 2  |
| 4     | a) Write the principle and working of detectors used in HPLC                           | 7     | 4  | 3  |
|       | b) Elaborate the principle and instrumentation of Gas Chromatography                   | 8     | 4  | 5  |
| 5     | a) Define and discuss various X-ray powder techniques                                  | 10    | 5  | 1  |
|       | b) Write the instrumentation and applications of Ion exchange chromatography           | 5     | 5  | 2  |
| 6     | a) Indicate the Principle and applications of potentiometer                            | 5     | 6  | 2  |
|       | b) Write the principle, instrumentation and applications of DTA                        | 10    | 6  | 3  |
| 7     | a) Write the Principle and instrumentation Atomic Absorption Spectroscopy.             | 8     | 1  | 3  |
|       | b) Write a note on Quenching and give appellations of fluorescence spectrophotometer.  | 7     | 1  | 3  |
| 8     | a) Write the principles, different methods and modes of capillary electrophoresis      | 5     | 5  | 3  |
|       | b) Elaborate the Instrumentation of High Performance Thin Layer Chromatography (HPTLC) | 10    | 4  | 3  |

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## M.Pharmacy (Ph.Analysis) I Semester (PCI) (Main) Examination Feb/March 2024

**Subject:** Advanced Pharmaceutical Analysis MPA102T

**Time:** 3 Hours

**Max.Marks:** 75

### PART- A

**Note:** Answer any FIVE questions. All questions carry equal marks.

| Q. No. | Question   | Marks | CO | BL |
|--------|--|-------|----|----|
| 1      | a) Define Impurity and write the classification of impurities in API and drug substances.              | 5     | 1  | 1  |
|        | b) Explain the different methods for quantification of impurities in API and drug products.            | 10    | 1  | 2  |
| 2      | a) Write a short note on the qualification of degradation products.                                    | 5     | 3  | 1  |
|        | b) How is photostability of formulations performed?  | 10    | 3  | 2  |
| 3      | a) What is impurity profiling and explain its importance in the testing of pharmaceutical products?    | 7     | 1  | 2  |
|        | b) Write about ICH stability guidelines for biological products.                                       | 8     | 3  | 1  |
| 4      | a) Write the potential sources of elemental impurities.  | 5     | 2  | 1  |
|        | b) Give the classification of residual solvents and their limits in drug substances and drug products. | 10    | 1  | 4  |
| 5      | a) Describe the principle and procedure involved in the biological assay of Heparin sodium.            | 7     | 5  | 2  |
|        | b) What is an antitoxin. Explain the biological assay of Tetanus antitoxin.                            | 8     | 5  | 2  |
| 6      | a) Explain in detail Enzyme Immuno assay. Give examples?   | 8     | 6  | 2  |
|        | b) Describe about Radio immuno assay with examples?  | 7     | 6  | 2  |
| 7      | Propose the steps involved in the method development and validation of impurity profiling of any drug? | 15    | 1  | 6  |
| 8      | a) What are accelerated stability studies and how is the shelf life of drug products calculated?       | 7     | 3  | 5  |
|        | b) Write about HPTLC as finger printing tool in stability testing of phytopharmaceuticals.             | 8     | 4  | 4  |

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