

ISRO PHARMACIST SYLLABUS & EXAM PATTERN

The selection process for the ISRO Pharmacist position is typically conducted in two phases: a written test and a skill test. Candidates who qualify in the written examination will be called for the skill test.

Written Examination

The written test is an objective-type examination designed to assess a candidate's knowledge in both pharmaceutical and general aptitude subjects.

Exam Pattern:

- **Mode of Exam:** The exam is conducted in online mode.
- **Marking Scheme:** Typically, one mark is awarded for each correct answer.
- **Negative Marking:** There is a provision for negative marking, where 0.33 marks are deducted for each incorrect answer.
- **Duration:** The duration of the written test is usually 2 hours (120 minutes).

Syllabus for the Written Examination

The syllabus for the ISRO Pharmacist exam is primarily based on the curriculum of a Diploma in Pharmacy. It is broadly divided into two parts: Pharmacy (Technical Subjects) and General Aptitude (Non-Technical Subjects).

Part A: Pharmacy (Technical Subjects)

PHARMACEUTICS

1. **History of the Profession of Pharmacy:** Covers the development of pharmacy in India concerning education, industry, practice, and professional associations.
2. **Pharmacopoeias and Packaging:** Salient features of the Indian Pharmacopoeia, along with knowledge of packaging materials and preservatives.
3. **Unit Operations:** Key processes including size reduction, size separation, filtration, drying, and extraction.
4. **Tablets and Capsules:** Manufacturing, types, and quality control of these solid dosage forms.
5. **Liquid Oral Preparations:** Understanding of solutions, syrups, elixirs, emulsions, suspensions, and dry powders for reconstitution.
6. **Topical Preparations:** Formulations and applications of creams, ointments, lotions, etc.
7. **Powders and Granules:** Preparation and types of powders and granules.
8. **Sterile Formulations:** Methods of sterilization, aseptic techniques, and preparation of sterile products like injections.

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9. **Immunological Products:** Basics of vaccines, sera, and other immunological products.
10. **Quality Assurance and Novel Drug Delivery:** Concepts of quality control, quality assurance, calibration, validation, and an introduction to novel drug delivery systems.

PHARMACEUTICAL CHEMISTRY

1. **Introduction and Errors:** An overview of pharmaceutical chemistry, including sources and types of errors in analysis.
2. **Impurities in Pharmaceuticals:** Identifying and controlling impurities in pharmaceutical substances.
3. **Analytical Techniques:** Principles of volumetric and gravimetric analysis.
4. **Inorganic Pharmaceuticals:** Study of various classes including:
 - Haematinics
 - Gastro-intestinal Agents
 - Topical agents
 - Dental products
 - Medicinal gases
5. **Drugs Acting on the Central Nervous System:** Including anaesthetics, sedatives, hypnotics, antipsychotics, anticonvulsants, and antidepressants.
6. **Drugs Acting on the Autonomic Nervous System:** Covers sympathomimetic agents, adrenergic antagonists, and cholinergic drugs.
7. **Drugs Acting on the Cardiovascular System:** Includes anti-arrhythmic, anti-hypertensive, and antianginal agents.
8. **Diuretics, Hypoglycaemic Agents, Analgesics, and Anti-Inflammatory Agents.**
9. **Anti-Infective Agents:** Covers antifungal, anti-tubercular, antiviral, and antimalarial drugs.
10. **Antibiotics and Anti-Neoplastic Agents:** Study of various antibiotics like tetracyclines and macrolides, and an introduction to anti-cancer drugs.

PHARMACOGNOSY

1. **Introduction:** Definition, history, scope, and classification of crude drugs.
2. **Quality Control:** Evaluation and adulteration of crude drugs.
3. **Phytochemicals:** A brief outline of the isolation, identification, and therapeutic applications of alkaloids, glycosides, tannins, volatile oils, and resins.

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4. **Crude Drugs Study:** In-depth knowledge of the biological source, chemical constituents, and therapeutic uses of drugs in categories like laxatives, cardiotonics, and astringents.
5. **Surgical Dressings and Traditional Medicine:** Understanding of plant fibers used as surgical dressings and the basic principles of traditional medicine systems like Ayurveda.

HUMAN ANATOMY AND PHYSIOLOGY

1. **Introduction:** Scope of the subject, basic terminology, and the structure and function of the cell.
2. **Body Systems:** Detailed study of the following systems:
 - Osseous system (bones)
 - Haemopoietic and Lymphatic systems (blood and lymph)[3]
 - Cardiovascular system (heart and blood vessels)[4]
 - Respiratory system (lungs and airways)
 - Digestive system
 - Nervous system
 - Urinary system
 - Endocrine system (hormones)
 - Reproductive system
3. **Sense Organs:** Anatomy and physiology of the eyes, ears, nose, and tongue.

PHARMACOLOGY

1. **General Pharmacology:** Covers routes of administration, pharmacokinetics (absorption, distribution, metabolism, excretion), and pharmacodynamics (mechanism of action).[5]
2. **Systemic Pharmacology:** Detailed study of drugs acting on various systems:
 - Peripheral and Central Nervous System
 - Cardiovascular System
 - Gastrointestinal Tract (anti-ulcer, anti-emetics, laxatives)
 - Kidneys (diuretics)
3. **Chemotherapy:** Includes antibiotics, antifungal, antiviral, and anti-cancer drugs.
4. **Other Key Areas:** Hormones, autocoids, and biologicals.

PHARMACY LAW AND ETHICS

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1. **Key Legislations:** In-depth knowledge of:

- Pharmacy Act, 1948
- Drugs and Cosmetics Act, 1940 and Rules, 1945
- Narcotic Drugs and Psychotropic Substances Act, 1985
- Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954

2. **Regulatory Bodies:** Role of CDSCO and IPC.

3. **Ethical Codes:** Understanding the Code of Pharmaceutical Ethics.

4. **Other Relevant Acts:** Introduction to the Prevention of Cruelty to Animals Act, Poisons Act, FSSAI Act, and Consumer Protection Act.

HOSPITAL AND CLINICAL PHARMACY

1. **Hospital Pharmacy:** Organization, supply chain management, inventory control, and drug distribution systems.
2. **Compounding:** Includes IV admixture services and Total Parenteral Nutrition (TPN).
3. **Clinical Pharmacy:** Introduction to pharmaceutical care, medication therapy management, and clinical laboratory tests.
4. **Patient Safety:** Detailed study of poisoning, pharmacovigilance, medication errors, and drug interactions.

OTHER IMPORTANT SUBJECTS

- **Social Pharmacy:** Role of pharmacists in public health, nutrition, national health programs, and pharmaco-economics.
- **Community Pharmacy and Management:** Good Pharmacy Practice, prescription handling, patient counseling, and management of a community pharmacy.
- **Biochemistry & Clinical Pathology:** Study of biomolecules (carbohydrates, proteins, lipids), enzymes, vitamins, minerals, and organ function tests.
- **Pharmacotherapeutics:** Rational use of medicines, Standard Treatment Guidelines (STGs), and management of diseases affecting various body systems.

Part B: General Aptitude (Non-Technical Subjects)

- **General Knowledge and Current Affairs**
 - Current events of national and international importance

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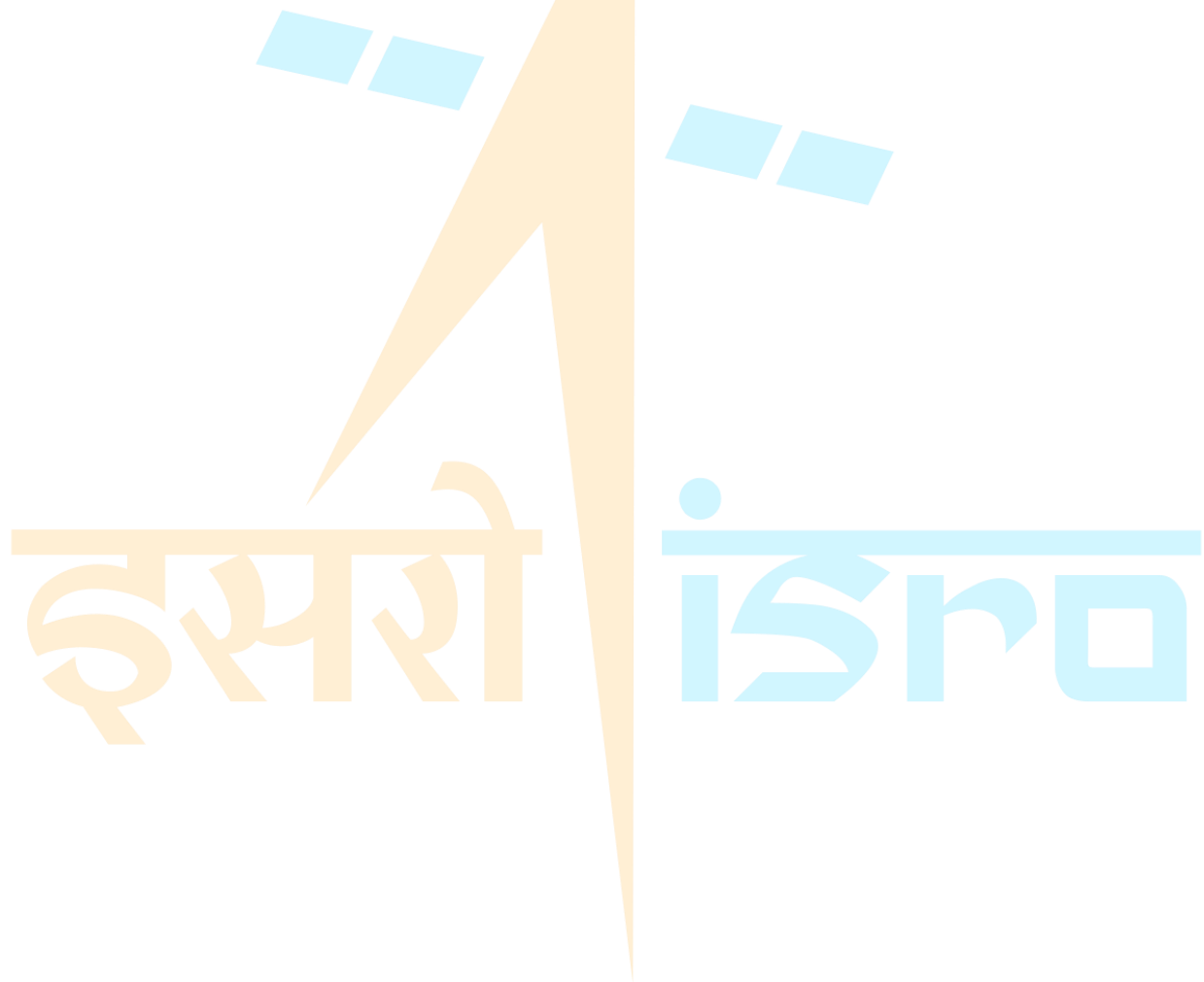
- Indian History and Constitution
- Scientific developments
- Geography and Economics
- General Science
- **General Intelligence & Reasoning:**
 - Analogies and similarities
 - Coding-decoding
 - Syllogism and blood relations
 - Series and pattern recognition
 - Logical reasoning
- **Quantitative Aptitude / Mathematics:**
 - Number system
 - Percentage, Profit and Loss
 - Simple and Compound Interest
 - Time, Speed, and Distance
 - Ratio and Proportion
 - Data Interpretation
- **General English:**
 - Vocabulary (Synonyms, Antonyms)
 - Grammar (Tenses, Articles, Prepositions)
 - Sentence structure
 - Reading Comprehension
- **Computer Applications and Environmental Sciences:**
 - Basic knowledge of computer hardware and software
 - MS Office
 - Basics of environmental science and ecology

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Skill Test

Candidates who clear the written test with the minimum required marks will be shortlisted for the skill test.

- **Nature of the Test:** The skill test is of a qualifying nature. The final selection is based on the marks obtained in the written test, provided the candidate qualifies in the skill test.
- **Syllabus:** The syllabus for the skill test is not explicitly defined but is based on the practical aspects of the pharmacist's role. It assesses the candidate's practical skills and knowledge in handling and dispensing medicines, reading prescriptions, and other pharmacy-related tasks.



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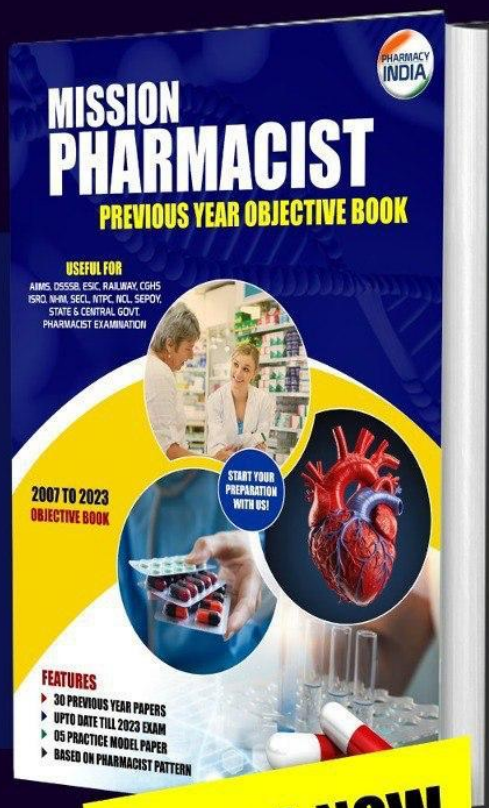
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FEATURES

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