

RRB Pharmacist Syllabus Blueprint

Official Examination Scheme & Comprehensive Curriculum Guide by Solotutes.com

Notification: RRB CEN 05/2026 (Paramedical Categories) **Post:** Pharmacist (Entry Grade) — 118 Vacancies

Pay Scale: Level-5 (7th CPC) **Published by:** Solotutes.com

1. Official Recruitment Overview & Essential Eligibility

The Railway Recruitment Board (RRB) has notified 118 vacancies for **Pharmacist (Entry Grade)** under Centralised Employment Notice (CEN) No. 05/2026 across various Railway Zones and Production Units in India. This blueprint provides aspirants with the authoritative, syllabus-mapped guide to prepare effectively for the single-stage Computer-Based Test (CBT).

RECRUITMENT PARAMETER	OFFICIAL SPECIFICATION UNDER CEN 05/2026
Designation	Pharmacist (Entry Grade)
Total Vacancies	118 Posts (All-India Zonal Distribution)
Essential Educational Qualification	Bachelor Degree in Pharmacy (B.Pharm) OR Doctor of Pharmacy (Pharm.D) from a recognized University or Institution. <i>Registration Requirement:</i> Must be a registered Pharmacist under Section 31 or 32 of the Pharmacy Act, 1948.
Qualification Note	Candidates must hold B.Pharm or Pharm.D degree. Standalone Diploma in Pharmacy (D.Pharm) candidates are not eligible under the revised recruitment rules for CEN 05/2026.
Age Limit	20 to 35 Years (as on July 1, 2026). Age relaxation applies for OBC (3 years), SC/ST (5 years), PwBD, and Ex-Servicemen.
Selection Process	Single Stage Computer Based Test (CBT) followed by Document Verification & Medical Examination.

2. CBT Examination Pattern & Scoring Matrix

The Computer-Based Test comprises 100 Multiple Choice Questions (MCQs) for 100 marks to be answered in 90 minutes. Merit ranking is strictly governed by the aggregate marks scored in this single test.

SECTION	SUBJECT DOMAIN	QUESTIONS	MARKS	WEIGHTAGE
Part 1	Professional Ability (Pharmacy Technical Core)	70	70	70.0%
Part 2	General Science (CBSE Class 10 Standard)	10	10	10.0%
Part 3	General Arithmetic, Intelligence & Reasoning	10	10	10.0%
Part 4	General Awareness & Healthcare Schemes	10	10	10.0%
Total	Full CBT Question Paper	100	100	100.0%

Scoring Rules & Negative Marking

- **Negative Marking: 1/3rd mark (0.33 mark)** is deducted for each incorrect answer. No deduction for unattempted questions.
- **Duration:** 90 minutes (120 minutes for eligible PwBD candidates with a scribe).
- **Minimum Qualifying Marks:** UR / EWS: 40%, OBC-NCL: 30%, SC: 30%, ST: 25%.

3. Professional Ability Detailed Syllabus (70 Marks)

The 70-mark Professional Ability section is aligned with the standard Pharmacy Council of India (PCI) degree curriculum across 10 core subject units:

Unit 1: Pharmaceutics & Pharmaceutical Technology

- **Dosage Form Science:** Liquid dosage forms (solutions, suspensions, emulsions, syrups, elixirs); Semisolids (ointments, creams, pastes, gels, suppositories, pessaries); Solid dosage forms (tablets, compression coating, hard/soft gelatin capsules, microencapsulation).
- **Calculations & Posology:** Metric/imperial conversions, percentage solutions, proof spirit calculations, alligation method, pediatric dose calculation formulas (Young's, Clark's, Dilling's, Fried's rules).
- **Industrial Unit Operations:** Size reduction (ball mill, fluid energy mill), size separation (sieves, cyclone separators), mixing, filtration and clarification, distillation, drying, evaporation, extraction (maceration, percolation, Soxhlet).
- **Sterilization & Packaging:** Moist heat autoclaving, dry heat ovens, radiation, gaseous sterilization, biological indicators (*Geobacillus stearothermophilus*); Cleanroom classifications; Type I, II, III glass containers, plastic polymers, blister/strip packaging.
- **Novel Drug Delivery Systems (NDDS):** Sustained and controlled release delivery, transdermal patches, liposomes, nanoparticles, targeted drug delivery.

Unit 2: Pharmacology & Toxicology

- **General Pharmacology:** Routes of administration, pharmacokinetics (ADME — absorption mechanisms, bioavailability, volume of distribution, hepatic metabolism, Phase I & II reactions, renal

clearance), pharmacodynamics (receptors, GPCR, dose-response relationships, therapeutic index).

- **Autonomic Nervous System (ANS):** Cholinergics, anticholinesterases, organophosphate poisoning, anticholinergics (atropine), sympathomimetics, alpha and beta adrenergic receptor blockers.
- **Central Nervous System (CNS):** Sedatives and hypnotics (barbiturates, benzodiazepines), general and local anesthetics, antiepileptics (phenytoin, carbamazepine, valproate), antiparkinsonian drugs, antipsychotics, antidepressants, opioid and non-opioid analgesics (NSAIDs).
- **Cardiovascular System (CVS):** Antihypertensives (ACE inhibitors, ARBs, CCBs, beta blockers, diuretics), antianginal drugs (nitrates), antiarrhythmics, congestive heart failure drugs (digoxin), statins.
- **Chemotherapy & Antimicrobials:** Sulfonamides, beta-lactam antibiotics (penicillins, cephalosporins), aminoglycosides, tetracyclines, macrolides, fluoroquinolones, antitubercular regimen (DOTS), antileprotic, antifungal, antiviral, antimalarials, and cancer chemotherapeutic agents.
- **Endocrine Pharmacology:** Thyroid/antithyroid drugs, insulin preparations, oral hypoglycemic agents (metformin, sulfonylureas, SGLT2 inhibitors), corticosteroids, oral contraceptives.
- **Toxicology & Pharmacovigilance:** Acute toxicity, heavy metal poisoning (lead, arsenic, mercury) and specific antidotes, adverse drug reaction (ADR) reporting under PvPI.

Unit 3: Pharmaceutical Chemistry & Medicinal Chemistry

- **Inorganic Pharmaceutical Chemistry:** Sources of impurities and limit tests (principles and apparatus for chloride, sulfate, iron, heavy metals, arsenic); Gastrointestinal agents (antacids, cathartics); Topical agents (astringents, protectives, antimicrobials); Dental products; Intra- and extracellular electrolytes; Diagnostic and therapeutic radiopharmaceuticals.
- **Medicinal Chemistry & SAR:** Chemical structure, IUPAC nomenclature, structure-activity relationship (SAR), chemical classification, and synthesis of official drugs: Aspirin, Paracetamol, Ibuprofen, Sulfamethoxazole, Isoniazid, Metronidazole, Chloroquine, Diazepam, Atenolol, Ciprofloxacin, Omeprazole.

Unit 4: Pharmacognosy & Phytochemistry

- **Crude Drugs:** Classification (morphological, taxonomical, chemical, pharmacological), evaluation techniques (organoleptic, microscopic, physical, chemical), adulteration types and detection.
- **Secondary Plant Metabolites:** Occurrence, diagnostic chemical tests, and therapeutic applications of Alkaloids (Opium, Cinchona, Rauwolfia, Belladonna, Vinca), Glycosides (Digitalis, Senna, Aloe), Volatile Oils (Clove, Peppermint, Cinnamon), Tannins (Catechu), Resins (Asafoetida, Benzoin).
- **Traditional Systems:** Ayurvedic, Siddha, Unani, and Homeopathic standard formulations.

Unit 5: Human Anatomy & Physiology (HAP)

- Cell and tissue histology, skeletal system, joints, and muscular contraction.
- Blood composition, coagulation mechanism, ABO and Rh blood grouping, lymphatic system.
- Cardiovascular system: Heart anatomy, conduction system, cardiac cycle, heart sounds, ECG basics, blood pressure regulation.

- Respiratory, digestive, urinary (nephron histology, GFR, urine formation), nervous, and endocrine systems.

Unit 6: Pharmaceutical Analysis & Quality Assurance

- **Volumetric Analysis:** Acid-base, redox, non-aqueous, complexometric, and precipitation titrations. Primary and secondary analytical standards.
- **Instrumental Methods:** UV-Visible spectrophotometry (Beer-Lambert's law), fluorimetry, flame photometry; Chromatography principles (TLC, paper chromatography, HPLC, Gas Chromatography).
- **Quality Assurance:** Good Manufacturing Practices (Schedule M), Good Laboratory Practices (GLP), ISO certification, calibration, and equipment qualification/validation.

Unit 7: Hospital, Clinical Pharmacy & Pharmacy Practice

- Hospital pharmacy organization, functions, Pharmacy & Therapeutic Committee (PTC), Hospital Formulary.
- Drug distribution systems: Outpatient and inpatient dispensing, unit dose dispensing, floor stock system, satellite pharmacy, CSSD.
- Inventory Control: ABC, VED, EOQ, Lead Time analysis, cold chain storage standards (2°C to 8°C).
- Clinical Pharmacy: Drug-drug and drug-food interactions, medication error prevention, therapeutic drug monitoring (TDM), patient counseling.

Unit 8: Pharmaceutical Jurisprudence & Regulatory Laws

- **Drugs and Cosmetics Act 1940 & Rules 1945:** Definitions (Spurious, Adulterated, Misbranded); Schedules (C, G, H, H1, M, P, X); Import, manufacture, and sale of drugs; Functions of Government Analyst and Drug Inspector.
- **Pharmacy Act 1948:** Constitution and functions of PCI and State Pharmacy Councils; Registration of pharmacists.
- **Related Statutes:** Narcotic Drugs and Psychotropic Substances (NDPS) Act 1985; Drug Price Control Order (DPCO 2013); Drugs and Magic Remedies Act 1954; Code of Pharmaceutical Ethics.

Unit 9: Biochemistry & Clinical Pathology

- Metabolism of carbohydrates (glycolysis, TCA cycle), lipids (beta-oxidation), and proteins (urea cycle).
- Enzyme kinetics, coenzymes, diagnostic clinical enzymology (AST, ALT, ALP, CK-MB).
- Routine urinalysis (glucose, ketone bodies, proteins, bilirubin) and liver/kidney function tests.

4. Universal Non-Technical Syllabus Breakdown (30 Marks)

4.1 General Science (10 Questions / 10 Marks)

- **Physics:** Units and dimensions, motion and laws of motion, work, energy, power, gravitation, fluids, sound, optics (mirrors and lenses), electricity (Ohm's law, circuits), magnetism, sources of energy.
- **Chemistry:** Matter and chemical bonding, chemical equations, acids, bases, and salts (pH scale), metals and non-metals, carbon compounds, modern periodic table trends, everyday chemistry.
- **Life Sciences:** Cell biology, plant and animal tissues, human physiology, nutrition, endocrine control, genetics and heredity, disease pathogens, immunization.

4.2 General Arithmetic, Intelligence & Reasoning (10 Questions / 10 Marks)

- **Arithmetic:** Number system, BODMAS, decimals, fractions, LCM & HCF, ratio and proportion, percentages, profit and loss, simple and compound interest, time and work, time-speed-distance, mensuration, basic data interpretation.
- **Reasoning:** Analogies, alphabetical and number series, coding-decoding, mathematical operations, direction sense, blood relations, syllogisms, Venn diagrams, data sufficiency, decision making.

4.3 General Awareness & Healthcare Schemes (10 Questions / 10 Marks)

- Current events of national and international importance (past 6-8 months).
 - Government Health Schemes: Ayushman Bharat (PM-JAY), PM-ABHIM, National Health Mission (NHM), Jan Aushadhi Scheme (PMBJP).
 - Indian Polity and Constitution (Preamble, Fundamental Rights, Articles, Parliament).
 - Indian Geography, Indian National Movement and History, Basic Indian Economy.
-

5. High-Yield Preparation Strategy for Solotutes Aspirants

1. **Target 70 Marks Technical First:** The technical core determines over 70% of the aggregate score. Prioritize Pharmacology, Pharmaceuticals, and Jurisprudence Schedules, which account for the highest question density.
2. **Master Non-Technical Accuracy:** With only 10 questions in General Science and 10 in Math/Reasoning, maintaining near 90% accuracy in these sections provides the decisive edge over peers.
3. **Control Negative Marking:** Every 3 wrong answers cost 1 full mark. Use calculated elimination rather than blind guessing.
4. **Practice CBT Simulation:** Attempt timed 90-minute full-length mocks on Solotutes.com to build time-allocation discipline.