



## **Syllabus for Written Test-Direct Recruitment**

### **Post: Medical Officer**

- a. **General Knowledge:** Indian History, Indian Geography, Indian Economy, Indian Polity & Constitution, Current Affairs-India & World.
- b. **Reasoning Ability:** Analogies – Semantic Analogy, Symbolic/ Number Analogy, Figural Analogy, Similarities & Differences, Word building, Relationship concepts, Arithmetic Number series – Semantic Series, Number Series, Coding & decoding – Small & Capital letters/ numbers coding, decoding & classification.
- c. **Numerical Ability:** Number System, Time & Work, Averages, Percentages, Profit & Loss, Ratio & Proportion, Simple & Compound Interest, Time & Distance.
- d. **General English:** Comprehension, One-word substitution, Synonyms & Antonyms, Spelling error, spotting error in sentences, Grammar- Noun, Pronoun, Adjective, Verb, Preposition, Conjunction, Use of 'A', 'AN' & 'The', Idioms & Phrases.

#### **e. Domain Knowledge:**

##### **i).General Surgery Including Orthopaedics:**

- a. Wound healing
- b. Sterilization, methods and precautions
- c. Transplantation
- d. Tumors
- e. Arterial disorders and venous disorders, Lymphatics
- f. Accident and emergency Surgery
- g. Sutures
- h. Fractures
- i. Tumors of Bone, Benign and Malignant
- j. Metabolic and Non infection disorders of bones and joints.
- k. Infection of Joints, Pyogenic, Tuberculosis
- l. Injuries of spine and pelvis & their management.

##### **ii). Medicine:**

- a. Cardinal manifestations and presentation of diseases.
- b. Genetics.
- c. Nutritional diseases
- d. Hematology
- e. Infectious diseases
- f. Disease of Cardio Vascular system
- g. Diseases of Respiratory system
- h. Diseases of Kidney and Urinary tract
- i. Diseases of Gastro Intestinal system.
- j. Diseases of Immune system, connective tissue and joints
- k. Endocrinology & Metabolism.
- l. Neurologic disorders.
- m. Environment and occupational hazards.



**iii). Obstetrics and Gynecology:**

1. Introduction to Obstetrics
2. Development of human placenta and embryo, anomalies of placenta and cord.
3. Formation of liquor amni and its circulation.
4. Anatomical and physiological changes during pregnancy.
5. Diagnosis of pregnancy
6. Methods of Obstetrical and Pelvic examination and special investigations.
7. Role of USG and Radiology in Obstetrics.
8. Antenatal care including use of drugs during pregnancy.
9. Antepartum, foetal surveillance in high risk pregnancies.
10. Social Obstetrics
11. Anemia in pregnancy
12. Heart diseases in pregnancy.
13. Diabetes, prediabetic state, glycoosuria in pregnancy
14. Respiratory diseases in pregnancy.
15. Psychiatric disorders in pregnancy and purperium
16. Jaundice in pregnancy
17. Skin diseases in pregnancy
18. Urinary Tract infection in pregnancy including Asymptomaticbacteruria, chronic renalinfection in pregnancy, renal failure in pregnancy.
19. Hypertensive disorders in pregnancy.
20. APH-plalcentaprevia accidental haemorrhage and extra placentalcauseshypofibrinogenemis,d iagnosis and management, DUC annuria.
21. Rh factor Pathology Rh testing and management of pregnancy and new born.
22. Multiple pregnancy
23. Postmaturity
24. Intrauterine growth retardation
25. Intrauterine death.
26. Recurrent pregnancy – wastages
27. Surgical Gynecological conditions with pregnancy
28. Abnormal position and presentations
29. Special cases
30. Normal Labour
31. Preterm Labour
32. Abnormal Uterine action
33. Prolonged labour
34. Normal Pelvis and foetal skull
35. Contracted Pelvis, CPD, Pelvic assessment
36. Obstructed Labour
37. Injuries of Genital Tract
38. Injury of the Urinary System
39. Obstetrical Palsy
40. Postpartum Collapse.
41. Normal Pueperium
42. Puerperal infection
43. Neonatology
44. Obstetrical procedure.
45. Anatomy of Uro Genital tract
46. Development of Urogenitaltract.
47. Physiology of Menstruation, ovulation and Normal Contro.
48. Gynaecological History taking, examination and investigation.
49. Sex differentiation, asexuality & Intersexuality.
50. Amenorrhoea causes, Diagnosis and Management.
51. Infertility Male & Female causes, Diagnosis with investigation and management with newermodalities.
52. Dysmenorrhoea
53. Abnormal uterine bleeding
54. Abortions.
55. Trophoblastic tumors
56. Ectopic pregnancy



57. Infections of Genital tract.
58. Genital prolapse Retroversion
59. Urinary Incontinence
60. Rectal incontinence
61. Endometriosis and Adenomyosis.
62. Benign conditions and benign tumors.
63. Pruritis
64. Chronic Vulval Dystrophies
65. Tumors of Uterus
66. Ovarian Tumors
67. Genital Cancers
68. Menopause
69. Role of USG & Radiology in Gynae
70. Preoperative and postoperative management & complications of major Gynae surgery.
71. Gynaecological surgery
72. MTP 1st and 2nd Trimester
73. Contraception's including Voluntary surgical contraception.
74. Demography

**iv). Pediatrics:**

- a. Growth and development.
- b. Adolescence
- c. Immunization
- d. Nutritional requirements and nutritional disorders.
- e. Infectious disease, including parasitic infestations
- f. Infections- Respiratory, G.I, CNS, Genito-Urinary, Hematopoietic infections in neonates, infants, children and adolescents.

**v). Preventive and Social Medicine:**

- a. Immunity and Immunization
- b. Epidemiology of communicable and non-communicable diseases.
- c. National Control/Eradication programmes relevant to specific diseases.
- d. Primary Health Care-Principles, components and levels of practice in the health care infrastructure.
- e. International Health.

**vi). Forensic Medicine & Toxicology:**

- a. Medicolegal examination of injured person
- b. Medicolegal examination of Rape victim
- c. Medicolegal examination of Sodomy
- d. Examination of accused of Rape
- e. Medicolegal Examination of Intoxicated person
- f. Age Certification
- g. Fire arm & bomb blast injury



**vii). Anatomy:**

- Cardiovascular system and lymphatic system-Blood supply of heart +lymphatic drainage of heart
- Thoracic outlet syndrome
- Vermiform appendix-Positions of appendix
- Triangles of neck, contents of anterior triangle
- Paranasal sinuses with applied anatomy

**viii). Physiology:**

**I) Blood**

- Anemia
- Hemostat's

**II) Cardiovascular System**

- ECG

**III) Gastrointestinal System**

- Pathophysiology of diarrheal disease

**VI) General**

- CSF
- Physiology of pain
- Brain stem reflexs, stretch reflexes and tendon reflexes
- Basal ganglia
- Speech

**IV) Nutrition**

- Diet during pregnancy and lactation
- Diet during infancy and childhood

**V) Environmental Physiology**

- Man in cold environment
- Man in hot environment

- Functional anatomy of eye
- Functional anatomy of ear: impedance matching
- Auditory pathway
- Olfaction
- Physiology of taste

**ix). Biochemistry:**

**a. Molecular Biology-its role in Clinical Biochemistry**

Structure, biochemical role of DNA and RNA, Genomes, Basic concepts of DNA & RNA metabolism Replication, Transcription and Translation-importance of their inhibitors, Recombinant DNA technology and polymerase chain reaction-their role in medicine, Genetherapy, Genomics and Bioinformatics, their relevance to medicine.



### **b. Biochemical basis of Hormone action**

Communication among cells and tissues, Molecular mechanism of action of Steroid hormones, hormones of pancreas, thyroid and parathyroid, Signal transduction, G-Proteins coupled receptors and second messengers, Role of leptins and adipocytokines.

### **c. Clinical Biochemistry**

Organ function tests: Liver function tests, Kidney function tests, Thyroid function tests, Adrenal and Pancreatic function tests, Tumor markers and growth factors, Biochemical changes in pregnancy and lactation, Water and electrolytes balance and imbalance, Acid-base balance and disorders. Total Quality Management of Laboratories, Internal quality control, External quality control, Accreditation of laboratories.

### **x). Microbiology:**

#### **a. General Bacteriology**

- Sterilization/disinfection

#### **b. System Bacteriology**

- Gram positive bacteria
- Gram Negative bacteria

- Mycobacteria

#### **c. Immunology**

- Innate and Adaptive immune responses

#### **d. Virology**

- DNA/RNA viruses

### **xi). ENT:**

- Complications of Otitis media
- Otosclerosis and tympanoplasty
- Acoustic neuroma (tumors of ear)
- Neurological affections of larynx

- Hoarseness and tumors
- Tracheostomy
- Diseases and tumors of thyroid
- ENT manifestation of AIDS

### **xii). Ophthalmology:**

#### **I) Cornea**

- Lasik laser

#### **II) Lens**

- Multifocal iol

#### **III) Retina**

- Diabetic Retinopathy

#### **VI) Optic nerve**

- Optic atrophy

### **xiii). Radiology:**

- Radiation Protection and hazards
- Basics of x-ray, ultrasound, CT and MRI
- Basics of PET & SPECT
- Clinical indications/contraindications of CT, MRI and PET

### **f. Descriptive= 100 Marks**

- Passage - 20 Marks
- Paragraph Writing (Narrative/Descriptive)- 15 Marks
- Report writing- 20 Marks
- Letter writing- 20 Marks
- Essay Writing- 25 Marks



**POST: Section Officer:**

- a) **General Knowledge:** Indian History, Indian Geography, Indian Economy, Indian Polity & Constitution, Current Affairs-India & World.
- b) **Reasoning Ability:** Analogies – Semantic Analogy, Symbolic/ Number Analogy, Figural Analogy, Similarities & Differences, Word building, Relationship concepts, Arithmetic Number series – Semantic Series, Number Series, Coding & decoding – Small & Capital letters/ numbers coding, decoding & classification.
- c) **Numerical Ability:** Number System, Time & Work, Averages, Percentages, Profit & Loss, Ratio & Proportion, Simple & Compound Interest, Time & Distance.
- d) **General English:** Comprehension, One-word substitution, Synonyms & Antonyms, Spelling error, spotting error in sentences, Grammar- Noun, Pronoun, Adjective, Verb, Preposition, Conjunction, Use of 'A', 'AN' & 'The', Idioms & Phrases.
- e) **Domain Knowledge:**
- |   |  |
|---|--|
| i. Office procedure & Office Management | vii. CCS Leave Rules                           |
| ii. General Financial Rules- 2018       | viii. CCS (CCA) Rules, 1965                    |
| iii. FR & SR                            | ix. CCS (Conduct) Rules, 1964                  |
| iv. Medical Attendance Rules            | x. CCS (Pension)Rules, 1972                    |
| v. LTC Rules                            | xi. Joining Time Rules                         |
| vi. Travelling Allowance Rules          | xii. Provident Fund Rules & New Pension Scheme |
|   | xiii. Reservation Policy                       |

**f. Descriptive= 100 Marks**

- |                               |   |
|-------------------------------|---|
| i. Passage - 20 Marks         | ii. Paragraph Writing (Narrative/Descriptive)- 15 Marks |
| iii. Report writing- 20 Marks | iv. Letter writing- 20 Marks                            |
| v. Essay Writing- 25 Marks    |   |

**g. Skill Test:**

- Typing speed of 35 wpm in English or 30 wpm in Hindi
- Proficiency in Computer operations: MS Word, MS Excel, MS Power Point & Internet
- Noting & Drafting



## Post:Upper Division Clerk/ Lower Division Clerk:

- a. **General Knowledge:** Indian History, Indian Geography, Indian Economy, Indian Polity & Constitution, Current Affairs-India & World.
- b. **Reasoning Ability:** Analogies – Semantic Analogy, Symbolic/ Number Analogy, Figural Analogy, Similarities & Differences, Word building, Relationship concepts, Arithmetic Number series – Semantic Series, Number Series, Coding & decoding – Small & Capital letters/ numbers coding, decoding & classification.
- c. **Numerical Ability:** Number System, Time & Work, Averages, Percentages, Profit & Loss, Ratio & Proportion, Simple & Compound Interest, Time & Distance.
- d. **General English:** Comprehension, One-word substitution, Synonyms & Antonyms, Spelling error, spotting error in sentences, Grammar- Noun, Pronoun, Adjective, Verb, Preposition, Conjunction, Use of 'A', 'AN' & 'The', Idioms & Phrases.
- e. **Domain Knowledge:**
  - i. Fundamental & Supplementary Rules
  - ii. CCS Leave Rules
  - iii. CCS (CCA) Rules, 1965
  - iv. CCS (Conduct) Rules, 1964
  - v. Joining Time Rules
  - vi. Provident Fund Rules & New Pension Scheme
  - vii. Medical Attendance Rules
- f. **Descriptive= 100 Marks**
  - i. Passage - 20 Marks
  - ii. Paragraph Writing (Narrative/Descriptive)- 15 Marks
  - iii. Report writing- 20 Marks
  - iv. Letter writing- 20 Marks
  - v. Essay Writing- 25 Marks
- g. **Skill Test:**
  - i. Typing speed of 35 wpm in English or 30 wpm in Hindi
  - ii. Proficiency in Computer operations: MS Word, MS Excel, MS Power Point & Internet





**POST: Professional Assistant/Semi Professional Assistant:**

- a. **General Knowledge:** Indian History, Indian Geography, Indian Economy, Indian Polity & Constitution, Current Affairs-India & World.
- b. **Reasoning Ability:** Analogies – Semantic Analogy, Symbolic/ Number Analogy, Figural Analogy, Similarities & Differences, Word building, Relationship concepts, Arithmetic Number series – Semantic Series, Number Series, Coding & decoding – Small & Capital letters/ numbers coding, decoding & classification.
- c. **Numerical Ability:** Number System, Time & Work, Averages, Percentages, Profit & Loss, Ratio & Proportion, Simple & Compound Interest, Time & Distance.
- d. **General English:** Comprehension, One-word substitution, Synonyms & Antonyms, Spelling error, spotting error in sentences, Grammar- Noun, Pronoun, Adjective, Verb, Preposition, Conjunction, Use of 'A', 'AN' & 'The', Idioms & Phrases.

**e. Domain Knowledge:**

1. Types of Libraries and their Features
2. Role of Libraries in Contemporary Society
3. Five Laws of Library Science
4. Library Legislation in different States of India
5. Intellectual Property Rights (IPR)
6. National and International Library Associations: ILA, IASLIC, IATLIS, SIS, IFLA, FID, ALA, ASLIB, SLA, etc.
7. National and International Agencies: UNESCO, OCLC, RRRLF, UGC, INFLIBNET, DELNET, etc.
8. Information Centres: DRTC, ISI, INSDOC (NISCAIR), NASSDOC, DESIDOC, SENDOC, etc.
9. Basic Terminology: Call Number, Class Number, Book Number, Isolates
10. Classification: Concept, Purpose and Species
11. Features of DDC, UDC and CC
12. Notation: Definition and Purpose
13. Five Fundamental Categories
14. Library Catalogue: Definition and Purpose
15. OPAC and WebOPAC
16. Canons of Classification and Cataloguing
17. Principles of Book Selection
18. Selection Tools: Print and Non-Print Materials
19. Processing of Documents: Accessioning, Classification, Cataloguing, Labeling and Shelving
20. Serials/Journals: Selection and Procurement
21. Book Transaction Systems: Traditional and Modern





22. Stock Verification of Books: Methods and Tools
23. Weeding Process
24. Information Sources: Print and Non-Print; Primary, Secondary and Tertiary Sources
25. Types of Dictionaries, Encyclopedias
26. Geographical and Biographical Sources
27. Indexing and Abstracting Sources
28. Types of Bibliographies
29. Biographical Sources
30. Types of Reference Services: Ready Reference Service and Long Range Reference Service
31. Reference Librarian: Role, Skills and Competences
32. User Education/Information Literacy Skills
33. CAS/SDI
34. International Information Systems: INIS, AGRIS, MEDLARS/MEDLINE, INSPEC
35. Information Seeking Pattern
36. Computer Genesis
37. Computer Generations
38. Primary and Secondary Memory; Storage Devices
39. Operating Systems: MS DOS, Windows, Linux
40. Programming: Algorithm, Flowcharts, Languages
41. MS-Word, MS-Excel, MS-Power Point, DBMS, CDS/ISIS, WINISIS

**f. Descriptive= 100 Marks**

- i. Passage - 20 Marks
- ii. Paragraph Writing (Narrative/Descriptive)- 15 Marks
- iii. Report writing- 20 Marks
- iv. Letter writing- 20 Marks
- v. Essay Writing- 25 Marks

**h. Skill Test:** To be notified separately



सत्यमेव जयते

कश्मीर कन्द्रीय विश्वावद्यालय  
CENTRAL UNIVERSITY OF KASHMIR

(मानव ससाधन विकास मंत्रालय)

(MINISTRY OF HUMAN RESOURCE DEVELOPMENT)

भारत सरकार

GOVERNMENT OF INDIA



## Pharmacist:

- General Knowledge:** Indian History, Indian Geography, Indian Economy, Indian Polity & Constitution, Current Affairs-India & World.
- Reasoning Ability:** Analogies – Semantic Analogy, Symbolic/ Number Analogy, Figural Analogy, Similarities & Differences, Word building, Relationship concepts, Arithmetic Number series – Semantic Series, Number Series, Coding & decoding – Small & Capital letters/ numbers coding, decoding & classification.
- Numerical Ability:** Number System, Time & Work, Averages, Percentages, Profit & Loss, Ratio & Proportion, Simple & Compound Interest, Time & Distance.
- General English:** Comprehension, One-word substitution, Synonyms & Antonyms, Spelling error, spotting error in sentences, Grammar- Noun, Pronoun, Adjective, Verb, Preposition, Conjunction, Use of 'A', 'AN' & 'The', Idioms & Phrases.
- Domain Knowledge:**

**Pharmaceutics-** Introduction of different dosage forms, Metrology, Packaging of pharmaceuticals, Size separation, Mixing and Homogenization, Clarification and Filtration, Extraction and Galenicals, Distillation, Introduction to drying process, Sterilization, Aseptic techniques, Processing of Tablets, Processing of Capsules, Study of immunological products.

Prescriptions, Incompatibilities in prescriptions, Posology, Dispensed Medications, Powders, Liquid oral Dosage forms: Monophasic, Biphasic Liquid Dosage Forms: Suspensions, Emulsions, Semi-Solid Dosage Forms: Ointments, Pastes, Jellies, Suppositories and pessaries, Dental and cosmetic preparations, Sterile Dosage forms: Parenteral dosage forms, Sterility testing, Ophthalmic products.

**Pharmaceutical Chemistry:-** Acids, bases and buffers, Antioxidants, Gastrointestinal agents, Topical Agents, Antimicrobials and Astringents, Dental Products, Respiratory stimulants, Expectorants and Emetics, Antidotes, Major Intra and Extra cellular electrolytes, Inorganic official compounds, Radio pharmaceuticals and contrast media, Quality control of Drugs and pharmaceuticals, Identification tests for cations and anions.

Introduction to the nomenclature of organic chemical systems, The chemistry of pharmaceutical organic compounds (Antiseptics and Disinfectants, Sulphonamides, Antileprotic Drugs, Antitubercular Drugs, Antimoebic and Anthelmintic Drugs, Antibiotic, Antifungal agent, Antimalarial Drugs, Tranquilizers, Hypnotics, General, Anaesthetics, Antidepressant Drugs, Adrenergic drugs, Adrenergic antagonist, Cholinergic Antagonists, Diuretic Drugs, Cardiovascular Drugs, Hypoglycemic Agents, Coagulants and Anti coagulants, Local Anaesthetics, Analgesics and Antipyretics, Non-steroidal anti-inflammatory agents, Diagnostic Agents, Anticonvulsants, cardiac glycosides, Antiarrhythmic, Antihypertensives & Vitamins, Steroidal Drugs, Anti-Neoplastic Drugs.



सत्यमेव जयते

कश्मीर कन्द्रीय विश्वाविद्यालय  
CENTRAL UNIVERSITY OF KASHMIR  
(मानव ससाधन विकास मंत्रालय)  
(MINISTRY OF HUMAN RESOURCE DEVELOPMENT)

भारत सरकार

GOVERNMENT OF INDIA



**Pharmacognosy:-** Definition, history and scope of Pharmacognosy ,Various systems of classification of drugs and natural origin, Adulteration and drug evaluation, Brief outline of f alkaloids, terpenoids, glycosides, volatile oils, tannins and resins, Occurrence, distribution, organoleptic evaluation, chemical constituents including tests wherever applicable and therapeutic efficacy of various drugs, Pharmaceutical aids, Miscellaneous drugs.

**Biochemistry & Clinical Pathology:** - Introduction to biochemistry, Carbohydrates, Lipids, Vitamins, Enzymes, Therapeutics, Introduction to Pathology of blood and urine. Lymphocytes and platelets, their role in health and disease, Erythrocytes.

**Human Anatomy & Physiology:** - Scope of Anatomy and physiology, Elementary tissues, Skeletal System, Cardiovascular System, Respiratory system, Urinary System, Muscular System, Central Nervous System, Sensory Organs, Digestive System, Endocrine System, Reproductive system.

**Health Education & community pharmacy:-** Concept of health, Nutrition and health, First aid, Environment and health, Fundamental principles of microbiology, Communicable diseases, Respiratory infections, Intestinal infection, Arthropod borne infections, Surface infection, Sexually transmitted diseases, Non-communicable diseases, Epidemiology.

**Pharmacology & Toxicology:-** Introduction to pharmacology, Routes of administration of drugs, General mechanism of drugs action, Drugs acting on the central Nervous system, Drugs acting on respiratory system, Autocoids, Cardiovascular drugs, Drugs affecting renal function, Hormones and hormone antagonists, Drugs acting on digestive system, Chemotherapy of microbial diseases, Disinfectants and antiseptics.

**Pharmaceutical Jurisprudence:-** Origin and nature of pharmaceutical legislation in India, Principles and significance of professional Ethics, Pharmacy Act, 1948, The Drugs and Cosmetics Act, 1940, The Drugs and Magic Remedies (objectionable Advertisement) Act, 1954, Narcotic Drugs and psychotropic substances Act, 1985, Latest Drugs (price control) order in force. Poisons Act 1919 (as amended to date) Medicinal and Toilet preparations (excise Duties) Act, 1955(as amended to date). Medical Termination of Pregnancy Act, 1971(as amended to date).

### **Hospital & Clinical Pharmacy :-**

Part-I: Hospital Pharmacy-Hospital and Hospital Pharmacy, Drug Distribution system in Hospitals, Manufacturing, Sterile manufacture, Non-sterile P.T.C.(Pharmacy Therapeutic Committee), Hospital Formulary system, Drug Information service , Surgical dressing, Application of computers.

Part II: Clinical Pharmacy- Introduction to Clinical pharmacy practice, Modern dispensing aspects, Common daily terminology used in the practice of Medicine. Disease, manifestation and patho-physiology, Physiological parameters with their significance. Drug Interactions, Adverse Drug Reaction, Drugs in Clinical Toxicity, Drug dependences, Bio-availability of drugs.



**f. Descriptive= 100 Marks**

- i. Passage - 20 Marks      ii. Paragraph Writing (Narrative/Descriptive)- 15 Marks  
iii. Report writing- 20 Marks      iv. Letter writing- 20 Marks  
v. Essay Writing- 25 Marks

**g. Skill Test:** To be notified separately

**Post: Assistant Engineer/ Junior Engineer:**

- a) **General Knowledge:** Indian History, Indian Geography, Indian Economy, Indian Polity & Constitution, Current Affairs-India & World.  
b) **Reasoning Ability:** Analogies – Semantic Analogy, Symbolic/ Number Analogy, Figural Analogy, Similarities & Differences, Word building, Relationship concepts, Arithmetic Number series – Semantic Series, Number Series, Coding & decoding – Small & Capital letters/ numbers coding, decoding & classification.  
c) **Numerical Ability:** Number System, Time & Work, Averages, Percentages, Profit & Loss, Ratio & Proportion, Simple & Compound Interest, Time & Distance.  
d) **General English:** Comprehension, One-word substitution, Synonyms & Antonyms, Spelling error, spotting error in sentences, Grammar- Noun, Pronoun, Adjective, Verb, Preposition, Conjunction, Use of 'A', 'AN' & 'The', Idioms & Phrases.

e) **Domain Knowledge:**

**1 Surveying:** Principles & classification of surveying; Measurements of distance and directions; Chain & compass surveying; Leveling ; Tachometry; Theodolite, Traversing; Contouring, Plane table surveying, Total station.

**2.Mechanics & structural analysis :** Laws of forces, moment, Analysis of stress and strain, stress-strain relationship. Elastic Constants. Plane stress and strain. Simple theory of bending; Flexural stress; Shear stress, shear centre .Torsion, Buckling of columns. Slope & deflection. Evaluation of internal forces in determinate, indeterminate, structures and plane trusses using classical methods. Approximate analysis of 2-D frames, Influence lines and travelling loads, Cables and suspension bridges. Plastic analysis of indeterminate beams and simple frames.

**3. Reinforced concrete structures:** Concrete technology: Classification, Properties, Grading, Methods of combining aggregates, specified grading, Testing of aggregates. Cement: Chemical composition, Hydration of cement, structure of hydrated cement, special cements, water chemical admixtures. Concrete: Properties of fresh concrete, Hardened concrete, Strength, Elastic properties, Creep and Shrinkage, workability of concrete strength. Mix Design: Principles of concrete mix design, Methods of concrete mix design, Testing of concrete. Special Concretes: Light weight concrete, Super plasticized concrete.

Philosophies of working stress, and limit state method of design, Analysis and design of members in flexure/ torsion, axial compression, combined forces by limit state method. Codal provisions



for slabs , beams , isolated and combined footings with reference to IS: 456-2000. Design of Slender Columns,

**4. Steel Structures:** Working stress and Limit state method concepts of steel design; riveted, bolted and welded connections. Design of steel, tension members, compression members including built up members. Design of steel flexural members, beams, build up sections and plate girders, steel roof truss. Design of Slender Columns,

**5. Soil Mechanics & Foundation Engineering:** Properties of soil, classification and interrelationship, Compaction behaviour, methods of compaction and their choice, Permeability and seepage, flow nets, inverted filters. Compressibility and consolidation, shearing resistance and stresses and failure, soil testing in laboratory and insitu, stress path and applications. Earth pressure theories, stress distribution in soil ,soil exploration, samplers, load tests, penetration tests  
Types of foundations, Selection criteria, Bearing capacity, settlement, Laboratory and field tests ,  
Types of piles and their design and layout, Foundations on expansive soils, swelling and its prevention, foundation on swelling soils.

**6. Highway Engineering:** Planning of highway systems, alignment and geometric design, horizontal and vertical curves, grade separation, Materials and construction methods for different surfaces and maintenance, principles of pavement design, Drainage

**7. Fluid mechanics and Hydraulics:** Basic fluid flow concepts, fluid statics, fluid kinematics and dynamics, pressurized flow, water hammer, laminar and turbulent flow; open channel hydraulics, irrigation engineering; water quality and waste treatment.

**8. Construction Practice, Planning and Management:** Construction control and management: Bar Chart Network techniques, Network diagrams, PERT –CPM; cost optimization, tenders, valuation, measurement books, cash book.

Construction planning-Construction facilities, Schedules, Layout of Plant utilities, Construction methods: Excavation and handling of Earth and Rock; Production and handling of Aggregates and Concrete, construction planning, excavation, form works, construction equipments, control on construction, Construction management, industrial development, financing of civil engineering works, engineering economics of projects, organization of civil engineering works, accounting , money banking and trade.

**a. Descriptive= 100 Marks**

- |                               |   |
|-------------------------------|---|
| i. Passage - 20 Marks         | ii. Paragraph Writing (Narrative/Descriptive)- 15 Marks |
| iii. Report writing- 20 Marks | iv. Letter writing- 20 Marks                            |
| v. Essay Writing- 25 Marks    |   |

**g. Skill Test:** To be notified separately



**Post: MTS/Peon/Office Attendant:**

- a. **General Knowledge:** Indian History-**Modern**, Indian Geography, Indian Constitution, Current Affairs-India, Basic Science
- b. **Reasoning Ability:** Analogies – Semantic Analogy, Symbolic/ Number Analogy, Figural Analogy, Similarities & Differences, Word building, Relationship concepts, Arithmetic
- c. **Numerical Ability:** Number System, Time & Work, Averages, Percentages, Profit & Loss, Simple & Compound Interest, Time & Distance.
- d. **General English:** Comprehension, One-word substitution, Synonyms & Antonyms, Spelling error, spotting error in sentences, Grammar- Noun, Pronoun, Adjective, Verb, Preposition, Conjunction, Use of 'A', 'AN' & 'The', Idioms & Phrases.
- e. **Domain Knowledge:**
  - i. Office Procedure & Officer Management
  - ii. CCS(Conduct) Rules
  - iii. CCS (Leave) Rules

**f. Descriptive= 100 Marks**

- i. Passage - 20 Marks
- ii. Paragraph Writing (Narrative/Descriptive)- 15 Marks
- iii. Report writing- 20 Marks
- iv. Letter writing- 20 Marks
- v. Essay Writing- 25 Marks

**g. Skill Test:** To be notified separately

**Sd/-  
Officer In-Charge  
Recruitment**