



अखिला भारतीय आयुर्विज्ञान संस्थान ऋषिकेश (उत्तराखण्ड)

ALL INDIA INSTITUTE OF MEDICAL SCIENCES RISHIKESH (UTTARAKHAND)

(An autonomous organization under the Ministry of Health & Family Welfare, Govt. of India)

परीक्षा विभाग (Examination Section)

#AIIMS-Rishi/Exam/23/1066

Date: 20 July 2023

Examination Notice

Subject: - **Recruitment Examination (CBT) for the posts of Programmer (Data Processing Assistant), Chief Cashier, Legal Assistant, Store Keeper, Cashier, Technical Assistant/Technician and Office/Store Attendant (Multi-tasking)-reg.**

All the candidates who applied for the posts of *Programmer (Data Processing Assistant), Chief Cashier, Legal Assistant, Store Keeper, Cashier, Technical Assistant/Technician and Office/Store Attendant (Multi-tasking)* against the Advt. No's: 2023/132, 21/05/2016(RIS)/ADMIN/ 0784, 2017/118, 2017/127, 2017/135, 2017/140, 2017/144, 2017/145, 2019/002, 2019/129 and subsequent re-open notices dated 13th June 2023 of AIIMS Rishikesh; are hereby informed that:-

- The pattern, scheme and tentative date & time of the examination will be as follows: -

Sr. No.	Activity/ Description	Details	
1	Tentative Date of Examination	Post Name	Tentative Date of Examination
		Office/Store Attendant (Multitasking)	27th July 2023 (10:00 AM to 1:00 PM)
		Cashier, Technical Assistant/Technician	27th July 2023 (3:00 PM to 6:00 PM)
		Store Keeper, Legal Assistant	29th July 2023 (10:00 AM to 1:00 PM)
		Chief Cashier, Programmer (Data Processing Assistant)	29th July 2023 (3:00 PM to 6:00 PM)
2	Tentative Date of uploading admit cards	20 th July 2023.	
3	Venue of Exam.	The examination will be conducted in 03 cities: Dehradun, Delhi and Bengaluru . <u>The Exact Venue of the Exam will be provided in the admit card.</u>	
4	Time duration of Examination	03 Hours (180 Minutes)	
5	Type of Examination	Computer Based Test (CBT)	
6	Number of Question Papers	Single (01) QP for each post	
7	Scheme of Examination	<ul style="list-style-type: none">• CBT multiple choice questions with four answer options and one of these four options will be the correct answer.• There will be only one question paper for each post. The question paper will consist of 200 questions (MCQs) and the maximum marks will be 200.• Each question will carry 01 (One) Marks for every correct answer.• There will be 0.25 negative marks for each wrong answered question.	

8	Minimum Qualifying marks	The qualifying marks in the Recruitment Examination will be 50% for UR category candidates, 45% for OBC category candidates and 40% for SC & ST category candidates.
9	Resolution of Tie Case	In cases where more than one candidate secures equal marks, tie will be resolved: i. First by using date of birth with older candidates placed higher. ii. If not resolved by (i) or in cases with same marks and same date of birth: number wrong answers/negative marks will be used wherein those with less wrong answers/negative marks will be placed higher.

- Candidates are advised to visit the website of AIIMS Rishikesh regularly for all corrigendum/ Addendum/updates regarding the examination/recruitment process for the above posts. They are also advised to regularly check their registered email for information sent by AIIMS regarding the examination.
- For any query or suggestion, candidates may send email to **helpdesk_exam@aiimsrishikesh.edu.in**.
- Post-wise indicative syllabus for the examination is given herewith in **Annexure-A**.

**Examination Section
AIIMS Rishikesh**



अखिल भारतीय आयुर्विज्ञान संस्थान ऋषिकेश (उत्तराखण्ड)
ALL INDIA INSTITUTE OF MEDICAL SCIENCES RISHIKESH (UTTARAKHAND)
(An autonomous organization under the Ministry of Health & Family Welfare, Govt. of India)

परीक्षा विभाग (Examination Section)

Indicative Syllabus for recruitment Examination

Post Name:-

Store Keeper

Pattern of examination:

- CBT Multiple Choice Questions with four answer options.
- Total **200** questions.
- **1** mark for each correctly answered question
- **Negative 0.25** marks for each wrong answered question.

Indicative Syllabus

- A. General Intelligence & Reasoning:** It would include question of both verbal and non- verbal type. This component may include questions on analogies, similarities and differences, space visualization, spatial orientation, problem solving, analysis, judgement, decision making, visual memory, discrimination, observation, relationship concepts, arithmetical reasoning and figural classification, arithmetic number series, non-verbal series, coding and decoding, statement conclusion, syllogistic reasoning etc. The topics are, Semantic Analogy, Symbolic/Number Analogy, Figural Analogy, Semantic Series, Number Series, Figural Series, problem Solving, Word Building, Coding & decoding Numerical Operations, symbolic Operations, Trends, Space Orientation, Space Visualization, Venn Diagrams, Drawing interfaces, Punched hole/pattern -folding & unfolding, Figural Pattern -folding and completion, Indexing, Address matching, Date & city matching, Classification of centre codes/roll numbers, Small& Capital letter/number coding, decoding and classification, Embedded Figures, Critical thinking Emotional Intelligence, Social Intelligence, other sub-topics, if any.
- B. General Awareness:** Question in this component will be aimed at testing the candidate's general awareness of the environment around him and its application to society. Question will also be designed to test knowledge of current events and of such matters of every day observations and experience in their scientific aspect as may be expected of any educated person, the test will also include questions related to India and its neighbouring countries especially pertaining History, Cultural, Geography, Economic Scene, General Policy & scientific Research.
- C. Quantitative Aptitude:** The questions will be designed to test the ability of appropriate use of number and number sense of the candidates. The scope of the test will be computation of whole number, decimals, fractions and relationship between numbers, Percentage. Ratio and Proportion, square roots, Average, Interest, profit and loss, Discounts, Partnership Business, Mixture and allegation, Time and Distance, Time and work, Basic algebraic identities of school algebra & Elementary surds, Graphs of linear Equations, Triangle and its various kind of centres, Congruence and similarity of triangles, Circle and its chords, tangents, angles subtended by chords of circle, common tangents to two or more circles, Triangle, Quadrilaterals, Regular Polygons, Circle, Right Prism, Right Circular Cone, Right Circular Cylinder, Sphere, Hemispheres, Rectangular Parallelepiped, Regular Right Pyramid with triangular of square base Trigonometric ratio, Degree and Radian Measures, Standard Identities Complementary angle, Heights and Distance Histogram, Frequency polygon, Bar diagram & Pie Chart.
- D. English Language and Comprehension:** Candidates ability to understand correct English, his basic comprehension and writing ability, etc would be tested.
- The questions in Part A, B, & D will be of level commensurate with the essential qualification viz. Graduation and questions in Part C will be of 10th standard level.*
- E. Basic Concepts of Management:** - Concepts of Material Management, Purchase Management, Inventory Management, Logistics Management, Packaging etc.
- F. Central Government Rules:-** Latest Govt. initiatives in public Procurement policy- GeM, GFR 2017 etc.

Note: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.

Post Name:-

Chief Cashier

Pattern of examination:

- CBT Multiple Choice Questions with four answer options.
- Total **200** questions.
- **1** mark for each correctly answered question
- **Negative 0.25** marks for each wrong answered question.

Indicative Syllabus

- A. General Intelligence & Reasoning:** It would include question of both verbal and non- verbal type. This component may include questions on analogies, similarities and differences, space visualization, spatial orientation, problem solving, analysis, judgement, decision making, visual memory, discrimination, observation, relationship concepts, arithmetical reasoning and figural classification, arithmetic number series, non-verbal series, coding and decoding, statement conclusion, syllogistic reasoning etc. The topics are, Semantic Analogy, Symbolic/Number Analogy, Figural Analogy, Semantic Series, Number Series, Figural Series, problem Solving, Word Building, Coding & decoding Numerical Operations, symbolic Operations, Trends Space Orientation, Space Visualization, Venn Diagrams, Drawing interfaces, Punched hole/pattern -folding & unfolding, Figural Pattern -folding and completion, Indexing, Address matching, Date & city matching, Classification of centre codes/roll numbers, Small& Capital letter/number coding, decoding and classification, Embedded Figures, Critical thinking Emotional Intelligence, Social Intelligence, other sub-topics, if any.
- B. General Awareness:** Question in this component will be aimed at testing the candidate's general awareness of the environment around him and its application to society. Question will also be designed to test knowledge of current events and of such matters of every day observations and experience in their scientific aspect as may be expected of any educated person, The test will also include questions related to India and its neighbouring countries especially pertaining History, Cultural, Geography, Economic Scene, General Policy & scientific Research.
- C. Quantitative Aptitude:** The questions will be designed to test the ability of appropriate use of number and number sense of the candidates. The scope of the test will be computation of whole number, decimals, fractions and relationship between numbers, Percentage. Ratio and Proportion, square roots, Average, Interest, profit and loss, Discounts, Partnership Business, Mixture and allegation, Time and Distance, Time and work, Basic algebraic identities of school algebra & Elementary surds, Graphs of linear Equations, Triangle and its various kind of centres, Congruence and similarity of triangles, Circle and its chords, tangents, angels subtended by chords of circle, common tangents to two or more circles, Triangle, Quadrilaterals, Regular Polygons, Circle, Right Prism, Right Circular Cone, Right Circular Cylinder, Sphere, Hemispheres, Rectangular Parallelepiped, Regular Right Pyramid with triangular of square base Trigonometric ratio, Degree and Radian Measures, Standard Identities Complementary angle, Heights and Distance Histogram, Frequency polygon, Bar diagram & Pie Chart.
- D. English Language and Comprehension:** Candidates ability to understand correct English, his basic comprehension and writing ability, etc would be tested.

The questions in Part A, B, & D will be of level commensurate with the essential qualification viz. Graduation and questions in Part C will be of 10th standard level.

E. Introduction of Govt. Accounting System and Govt. Budgeting.

- F. Fundamental Principles and Basic Accounting:** Financial Accounting - Nature and scope, Limitations of financial Accounting, Basic concept and Conventions, Generally Accepted Principles. Basic concept of Accounting: Single and Double Entry System, Books of Original Entry, Bank Reconciliation, Journal, Ledgers, Trial Balance, Rectification of Errors, Manufacturing, Trading, Profit & Loss Appropriation Accounts, Balance Sheet, Distinction between Capital and Revenue Expenditure, Depreciation Accounting Valuation of Inventories, Non Profit making organization' Accounts, Receipts and Payments, Income & Expenditure Accounts, BIS of Exchange, self- Balancing Ledgers.

Note: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.

Post Name:-

Legal Assistant

Pattern of examination:

- CBT Multiple Choice Questions with four answer options.
- Total **200** questions.
- **1** mark for each correctly answered question
- **Negative 0.25** marks for each wrong answered question.

Indicative Syllabus

- A. English Language and Comprehension:** Questions in this component will be designed to test the candidate's understanding and knowledge of English language and will be based on spot the error, fill in the blanks, synonyms, antonyms, spelling/detecting misspelt words, idioms & phrases, one word substitution, improvement of sentences, active/passive voice of verbs, conversion into direct/indirect narration, shuffling of sentences, parts, shuffling of sentences in a passage, comprehension passage and any other English language questions at the level of Matriculation/Higher Secondary. Candidates' ability to understand correct English, his basic comprehension and writing ability, etc. would be tested.
- B. General Studies/Current Affairs/G.K. :-** Questions in this component will be aimed at testing the candidates' general awareness of the environment around him and its application to society. Questions will also be designed to test knowledge of current event and of such matters of every day observations and experience in their scientific aspect as may be expected of any educated person. The test will also include questions relating to India and its neighbouring Countries especially pertaining History, Culture, Geography, Economic Scene, General Policy, Indian Constitution & Scientific Research and Others.
- C. Logical/Verbal Reasoning/Quantitative Aptitude:** It would include questions of both verbal and non-verbal type. This component may include questions on analogies, similarities and differences, space visualisation, spatial orientation, problem solving, analysis, judgement, decision making, visual memory, discrimination, observation, relationship concepts, arithmetical reasoning and figural classification, arithmetic number series, non-verbal series, coding and decoding, statement conclusion, syllogistic reasoning etc. The topics are Semantic Analogy, Symbolic/Number Analogy, Figural Analogy, Semantic Series, Number Series, Figural Series, Problem Solving, Word Building, Coding & de-coding, Numerical Operations, Symbolic Operations, Trends, Space Orientation, Space Visualisation, Venn Diagrams, Drawing inferences, Punched hole/pattern - folding & un-folding, Figural Pattern folding and completion, Indexing, Address matching, Date & City matching, Classification of centre codes/roll numbers, Small & Capital letters/numbers coding, decoding and classification, Embedded Figures, Critical thinking, Emotional Intelligence, Social Intelligence & Other subtopics, if any or any other questions as per the pattern of SSC/UPSC/SPSC, etc.
- D. Basic Computers:** General Computer Processing ability in MS-Office like Word Processing, Excel, PowerPoint, etc. & Operating Systems. Professional Software/Hardware System relevant to the Post. Any other Computer/IT related questions.

The questions in Part A, B, & D will be of level commensurate with the essential qualification viz. Graduation and questions in Part C will be of 10th standard level.

E. Post-Specific based on Domain Knowledge Area/Cadre:

Law related questions (relevant area specific to the job at the level of Graduate/Degree syllabus along with Legal Practitioner/firm or as Legal Assistant in Legal Department of a Government Organisation):- Constitution of India with special emphasis on Fundamental Rights, Directive Principles of State Policy, Right to Constitutional Remedies, Functioning of High Courts, Supreme Court, Separation of Power, Executive, Legislature and Judiciary, Public Interest Litigation, Power of Judicial Review, Rule of Law in India, Principles of Natural Justice, Attorney General and Advocate General. The Administrative Tribunals Act, 1985, The Consumer Protection Act, 2019. Law of Evidence, AIMS Act, Law of Contract, Intellectual Property Laws with Special emphasis on Patents & Copyrights, Indian Penal Code, 1860, Law of Torts, Micro, Small and Medium Enterprises Development Act, 2006, The Prevention of Corruption Act, 1988, The Sexual Harassment of Women at workplace (Prohibition & Redressal) Act, 2013, The Epidemic Disease Act, 1897, National Medical Commission Act-2019, IMC (Professional Conduct, Etiquette and Ethics) Regulation, 2002, The Contract Labour (Regulation & Abolition) Act, 1970, The Minimum wages Act, 1948, Arbitration & Conciliation Act, 1996. Provisions required to be referred generally in Government Offices will be given importance, RTI Act-2005, CCS(CCA) Rules, Concepts of Medical Negligence, IT Act-2000, Labour Laws, Basic Concepts of Administrative Law, Service Law etc.

Note: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.

Post Name:-

Cashier

Pattern of examination:

- CBT Multiple Choice Questions with four answer options.
- Total **200** questions.
- **1** mark for each correctly answered question
Negative 0.25 marks for each wrong answered question.

Indicative Syllabus

- A. General Intelligence & Reasoning:** It would include question of both verbal and non- verbal type. This component may include questions on analogies, similarities and differences, space visualization, spatial orientation, problem solving, analysis, judgement, decision making, visual memory, discrimination, observation, relationship concepts, arithmetical reasoning and figural classification, arithmetic number series, non-verbal series, coding and decoding, statement conclusion, syllogistic reasoning etc. The topics are, Semantic Analogy, Symbolic/Number Analogy, Figural Analogy, Semantic Series, Number Series, Figural Series, problem Solving, Word Building, Coding & decoding Numerical Operations, symbolic Operations, Trends Space Orientation, Space Visualization, Venn Diagrams, Drawing interfaces, Punched hole/pattern -folding & unfolding, Figural Pattern -folding and completion, Indexing, Address matching, Date & city matching, Classification of centre codes/roll numbers, Small& Capital letter/number coding, decoding and classification, Embedded Figures, Critical thinking Emotional Intelligence, Social Intelligence, other sub-topics, if any.
- B. General Awareness:** Question in this component will be aimed at testing the candidate's general awareness of the environment around him and its application to society. Question will also be designed to test knowledge of current events and of such matters of every day observations and experience in their scientific aspect as may be expected of any educated person, the test will also include questions related to India and its neighbouring countries especially pertaining History, Cultural, Geography, Economic Scene, General Policy & scientific Research.
- C. Quantitative Aptitude:** The questions will be designed to test the ability of appropriate use of number and number sense of the candidates. The scope of the test will be computation of whole number, decimals, fractions and relationship between numbers, Percentage. Ratio and Proportion, square roots, Average, Interest, profit and loss, Discounts, Partnership Business, Mixture and allegation, Time and Distance, Time and work, Basic algebraic identities of school algebra & Elementary surds, Graphs of linear Equations, Triangle and its various kind of centres, Congruence and similarity of triangles, Circle and its chords, tangents, angles subtended by chords of circle, common tangents to two or more circles, Triangle, Quadrilaterals, Regular Polygons, Circle, Right Prism, Right Circular Cone, Right Circular Cylinder, Sphere, Hemispheres, Rectangular Parallelepiped, Regular Right Pyramid with triangular of square base Trigonometric ratio, Degree and Radian Measures, Standard Identities Complementary angle, Heights and Distance Histogram, Frequency polygon, Bar diagram & Pie Chart.
- D. English Language and Comprehension:** Candidates ability to understand correct English, his basic comprehension and writing ability, etc. would be tested.
- The questions in Part A, B, & D will be of level commensurate with the essential qualification viz. Graduation and questions in Part C will be of 10th standard level.*
- E. Basic Computers:**
- i) General Computer Processing ability in MS-Office like Word Processing, Excel, PowerPoint, etc. & Operating Systems.
 - ii) Professional Software/Hardware System relevant to the Post.
 - iii) Any other Computer/IT related questions
- F. Fundamental Principles and Basic Accounting:** Financial Accounting - Nature and scope, Limitations of financial Accounting, Basic concept and Conventions, Generally Accepted Principles. Basic concept of Accounting: Single and Double Entry System, Books of Original Entry, Bank Reconciliation, Journal, Ledgers, Trial Balance, Rectification of Errors, Manufacturing, Trading, Profit & Loss Appropriation Accounts, Balance Sheet, Distinction between Capital and Revenue Expenditure, Depreciation Accounting Valuation of Inventories, Non Profit making organization' Accounts, Receipts and Payments, Income & Expenditure Accounts, Bi's of Exchange, self- Balancing Ledgers.

Note: - *It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.*

Post Name:-

Office /Store Attendant (Multi-Tasking)

Pattern of examination:

- CBT Multiple Choice Questions with four answer options.
- Total **200** questions.
- **1** mark for each correctly answered question
Negative 0.25 marks for each wrong answered question.

Indicative Syllabus

- A. General Knowledge & Awareness:** Includes questions relating to History, Indian Polity & Constitution, Art & Culture, Geography, Economics, General Policy, Science & Scientific Research, National/International Organizations /Institutions, current events, environment etc.
- B. Quantitative Aptitude-** Includes questions relating to Simplification, Decimals, Fractions, L.C.M., H.C.F., Ratio & Proportion, Percentage, Average, Profit & Loss, Discount, Simple & Compound Interest, Mensuration, Time & Work, Time & Distance, Tables & Graphs, etc.
- C. Reasoning Ability:** Includes questions relating to both verbal and non-verbal types, analogies, similarities, differences, space visualization, problem solving, analysis, judgment, decision making, visual memory, discrimination, observation, relationship, concepts, arithmetical reasoning, verbal and figure classification, arithmetical number series etc.
- D. General English:** Includes questions on Antonyms, Synonyms, Spelling Check, Active/Passive Voice, Spotting Errors, Sentence Improvement, One Word Substitutes, Selecting Words, Sentence Corrections, Idioms and Phrases, Common Error Detection, Ordering of Words, Verbal Analogies, Sentence Formation, Completing Statements, Change of Speech.

The questions in Part A, B, & D will be of level commensurate with the essential qualification and questions in Part C will be of 10th standard/level.

- E. Computer Fundamentals:** Includes questions on Operating System, MS Office, MS Word, MS Excel, Power Point, Tally, Internet, E-mail, Antivirus and various online tools used in day- to-day office work.

Note: - *It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.*

Post Name:-

Programmer (Data Processing Assistant)

Pattern of examination:

- CBT Multiple Choice Questions with four answer options.
- Total **200** questions.
- **1** mark for each correctly answered question
- **Negative 0.25** marks for each wrong answered question.

Indicative Syllabus

- A. General Awareness (General Knowledge & Awareness):** - Question in this component will be aimed at testing the candidate's general awareness of the environment around him and its application to society. Question will also be designed to test knowledge of current events and of such matters of every day observations and experience in their scientific aspect as may be expected of any educated person, the test will also include questions related to India and its neighbouring countries especially pertaining History, Cultural, Geography, Economic Scene, General Policy & scientific Research.
- B. Quantitative Aptitude:** - The questions will be designed to test the ability of appropriate use of number and number sense of the candidates. The scope of the test will be computation of whole number, decimals, fractions and relationship between numbers, Percentage. Ratio and Proportion, square roots, Average, Interest, profit and loss, Discounts, Partnership Business, Mixture and allegation, Time and Distance, Time and work, Basic algebraic identities of school algebra & Elementary surds, Graphs of linear Equations, Triangle and its various kind of centres, Congruence and similarity of triangles, Circle and its chords, tangents, angles subtended by chords of circle, common tangents to two or more circles, Triangle, Quadrilaterals, Regular Polygons, Circle, Right Prism, Right Circular Cone, Right Circular Cylinder, Sphere, Hemispheres, Rectangular Parallelepiped, Regular Right Pyramid with triangular of square base Trigonometric ratio, Degree and Radian Measures, Standard Identities Complementary angle, Heights and Distance Histogram, Frequency polygon, Bar diagram & Pie Chart.
- C. General Intelligence & reasoning (Reasoning Ability):** - It would include question of both verbal and non- verbal type. This component may include questions on analogies, similarities and differences, space visualization, spatial orientation, problem solving, analysis, judgement, decision making, visual memory, discrimination, observation, relationship concepts, arithmetical reasoning and figural classification, arithmetic number series, non-verbal series, coding and decoding, statement conclusion, syllogistic reasoning etc. The topics are, Semantic Analogy, Symbolic/Number Analogy, Figural Analogy, Semantic Series, Number Series, Figural Series, problem Solving, Word Building, Coding & decoding Numerical Operations, symbolic Operations, Trends, Space Orientation, Space Visualization, Venn Diagrams, Drawing interfaces, Punched hole/pattern -folding & unfolding, Figural Pattern -folding and completion, Indexing, Address matching, Date & city matching, Classification of centre codes/roll numbers, Small& Capital letter/number coding, decoding and classification, Embedded Figures, Critical thinking Emotional Intelligence, Social Intelligence, other sub-topics, if any.
- D. General English (English Language and Comprehension):-** Candidates ability to understand correct English, his basic comprehension and writing ability, etc would be tested.

The questions in Part A, C, & D will be of level commensurate with the essential qualification and questions in Part B will be of 10th standard level.

- E. Data Structures & Applications Data Structures & Applications**
- F. Computer Organization & Architecture**
- G. Discrete Structures & Graph Theory**
- H. Object Oriented Concepts**
- I. Design & Analysis of Algorithm**
- J. Data Communication & Computer Networks**
- K. Database Management Systems**
- L. Artificial Intelligence & Machine Learning**
- M. Cryptography, Information & Network Security**
- N. Operating Systems**
- O. Data Mining & Data Warehousing**
- P. Big Data Analysis**
- Q. Wireless Networks & Mobile Computing**
- R. Internet of Things & Applications**
- S. High Performance Computing**
- T. Web Application designing, System Security**
- U. Programming Concepts**

Note: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.

Post Name:-

Technical Assistant/ Technician

Pattern of examination:

- CBT Multiple Choice Questions with four answer options.
- Total **200** questions.
- **1** mark for each correctly answered question
- **Negative 0.25** marks for each wrong answered question.

Indicative Syllabus

Part-1

- A. General Intelligence & Reasoning:-** It would include question of both verbal and non- verbal type. This component may include questions on analogies, similarities and differences, space visualization, spatial orientation, problem solving, analysis, judgement, decision making, visual memory, discrimination, observation, relationship concepts, arithmetical reasoning and figural classification, arithmetic number series, non-verbal series, coding and decoding, statement conclusion, syllogistic reasoning etc. The topics are, Semantic Analogy, Symbolic/Number Analogy, Figural Analogy, Semantic Series, Number Series, Figural Series, problem Solving, Word Building, Coding & decoding Numerical Operations, symbolic Operations, Trends, Space Orientation, Space Visualization, Venn Diagrams, Drawing interfaces, Punched hole/pattern -folding & unfolding, Figural Pattern -folding and completion, Indexing, Address matching, Date & city matching, Classification of centre codes/roll numbers, Small& Capital letter/number coding, decoding and classification, Embedded Figures, Critical thinking Emotional Intelligence, Social Intelligence, other sub-topics, if any.
- B. General Awareness:** Question in this component will be aimed at testing the candidate's general awareness of the environment around him and its application to society. Question will also be designed to test knowledge of current events and of such matters of every day observations and experience in their scientific aspect as may be expected of any educated person, the test will also include questions related to India and its neighbouring countries especially pertaining History, Cultural, Geography, Economic Scene, General Policy & scientific Research.
- C. Quantitative Aptitude:** The questions will be designed to test the ability of appropriate use of number and number sense of the candidates. The scope of the test will be computation of whole number, decimals, fractions and relationship between numbers, Percentage. Ratio and Proportion, square roots, Average, Interest, profit and loss, Discounts, Partnership Business, Mixture and allegation, Time and Distance, Time and work, Basic algebraic identities of school algebra & Elementary surds, Graphs of linear Equations, Triangle and its various kind of centres, Congruence and similarity of triangles, Circle and its chords, tangents, angels subtended by chords of circle, common tangents to two or more circles, Triangle, Quadrilaterals, Regular Polygons, Circle, Right Prism, Right Circular Cone, Right Circular Cylinder, Sphere, Hemispheres, Rectangular Parallelepiped, Regular Right Pyramid with triangular of square base Trigonometric ratio, Degree and Radian Measures, Standard Identities Complementary angle, Heights and Distance Histogram, Frequency polygon, Bar diagram & Pie Chart.
- D. English Language and Comprehension:** Candidates ability to understand correct English, his basic comprehension and writing ability, etc. would be tested.
- The questions in Part A, B, & D will be of level commensurate with the essential qualification viz. Graduation and questions in Part C will be of 10th standard level.*
- E. Anatomy:-** General Anatomy, Systemic Anatomy, Nervous System, Cardiovascular System, L10ymphatic System, Respiratory System, Digestive System, Urinary System, Reproductive System, Endocrine System, Special Senses, Anatomical Techniques.
- F. Physiology:-** Blood, Muscle, Gastro Intestinal Tract, Kidney, Reproduction, Cardio Vascular System, Respiration, Nerve, Central Nervous System, Autonomic Nervous System, 11 Special Senses.
- G. Biochemistry:-** Role of Medical Laboratory technologists – ethics of laboratory practice. Laboratory safety– Common lab accidents their prevention and their first aid. General laboratory layout as applicable to biochemistry. Laboratory glassware and its uses – Types of pipettes, calibration of pipettes, cleaning of glassware. Preparation of solutions – units of weights and volume, Calculation of concentration and methods of expressing concentration of solution. Types of water, their properties, uses and method of production. Basic and elementary concepts of chemistry and properties of carbohydrates as applicable to the human body. Basic and elementary concepts of chemistry and properties of lipids as applicable to the human body. Basic and elementary concepts of chemistry and properties of proteins & amino acids as applicable to the human body. Basic and elementary concepts of chemistry and properties of nucleic Acids as applicable to the human body. Basic and elementary concepts of chemistry and properties of lipids as applicable to the human body. Basic and elementary concepts of chemistry and properties of proteins & amino acids as applicable to the human body. Basic and elementary concepts of chemistry and properties of nucleic Acids as applicable to the human body. Basic concepts of principles of nutrition and nutrients macro and micro nutrients. Vitamins & Minerals. Vitamins- Fat soluble vitamins, Water soluble vitamins sources, Biochemical role, RDA, deficiency manifestations Minerals– Calcium, Phosphorous, Iron, Copper, Zinc, Magnesium, Manganese, Iodine. Working Principles and application of photometry, and atomic absorption, Spectrophotometry. Fundamental concepts of biophysical phenomena like osmosis, dialysis, colloidal state, viscosity, absorption, osmotic pressure, surface tension and their application in relation to the human body. Definition, basic concepts of classification mechanism of action and properties of enzymes, factors influencing enzyme action. Definition and basic concepts of acids, bases, indicators and buffer, their application in laboratory. Elementary concepts of radioactivity, radioisotopes, their application in medicines and agriculture isotopic dilution analysis, radioactivity counting techniques. Working principles Types and applications of Electrophoresis – Paper, Agarose Gel, Cellulose Acetate and PAGE. Working principles, types and applications of Chromatography - Paper Chromatography, TLC, Ion Exchange, Affinity Gel, Filtration, Gas Chromatography and HPLC. Working principles, types and application of centrifugation.
- H. Pharmacology:** General Pharmacology. Drugs Acting on the central nervous system-Classification, Mechanism of action, Therapeutic uses and important adverse effects of the different categories of drugs. Drugs acting on autonomic

nervous system. Drugs acting on respiratory system, Drugs acting on cardiovascular system, Drugs acting on Blood and Blood forming organs, Drugs acting on gastrointestinal tract and respiratory system, Hormones and Hormone Antagonists, Chemotherapy.

- I. Microbiology And Immunology: General Microbiology-** History of Microbiology, Classification and nomenclature of micro-organisms, Morphology of bacteria, staining methods, Principle and uses of various microscopes, Growth and nutrition of bacteria, Culture media and culture methods-aerobic and anaerobic, Theory and practical of sterilization disinfection antiseptics and asepsis, Metabolism of bacteria, Genetics of bacteria including gene cloning and genetic engineering, Bacterial toxins, Anti- microbial agents, Antimicrobial susceptibility tests, Quality control and safety in microbiology. **IMMUNOLOGY-** Immunity – innate and acquired immunity, humoral and cell mediated, Antigen antibody reactions and their applications, Complement, Hypersensitivity, Histocompatibility, autoimmunity and tumor immunity.
- J. Applied Bacteriology, Virology, Mycology and Sterilization:** Common types of bacteria, viruses, protozoa. Effects of bacterial infection, immunity, sensitivity, resistance. Principles of asepsis, disinfection, sterilization, fumigation, and prevention of cross infection. Sterilization and its various methods. Various types of sterilizers, autoclaves, hot air oven, flush autoclave, working principles, care and maintenance. Nosocomial infection (Hospital acquired infection). C.S.S.D. set up, function, procedures, discipline, storage and safety of articles. Universal safety precautions with special reference to AIDS and Hepatitis.

Part-2

(Note: In Part-2 a candidate will have to choose either K or L)

- K. (K-i) Hematology And Blood Banking:** General-Hematology: Origin, development, morphology, maturation, function and fate of blood cells, nomenclature of blood cells. Various methods of blood collection, anticoagulants-mechanism and uses. Counting chamber- hemocytometry. Enumeration of RBC including various counting chambers, diluting fluids for RBC count. Hemoglobinometry. Principles and methods of quantitating Hb. Concentration of blood including knowledge of errors and quality control in various method. Abnormal hemoglobin and its investigation. Principles and methods of determining PVC calculation and interpretation of red cell indices. ESR: introduction, factors affecting ESR, principles and methods of determining ESR, increasing and decreasing conditions of ESR. WBC: introduction, development of WBC, diluting fluids. Absolute eosinophil count, errors in sampling, mixing, diluting and counting. Cell counting, advantages and disadvantages, uses and mechanism of cell counting, quality control in cell counts. Preparation of peripheral smear and bone marrow smear. Thin smear, thick smear. Buffy coat smear, wet preparation. Romanowsky stain. Preparation advantages and disadvantages. Principle and methods of staining of Blood smears and bone marrow smears. Supravital stain. Reticulocyte count. Heinz bodies. Description of morphology of normal and abnormal red cells. Blood differential WBC counting. Recognition of abnormal cell. Anaemia – definition etiology classification and laboratory diagnosis. Hemolytic anaemia, definition, causatives, laboratory investigations. Auto hemolysis, acid hemolysis. Methods of identification of abnormal hemoglobin including spectroscopy. HB electrophoresis. Alkali denaturation Test. Sick cell preparation. Various benign leucocyte reaction – Leukocytosis. Neutrophilia, Eosinophilia, Lymphocytosis. Infectious mononucleosis. leucopenias. Leukemias–definition, causes, classification, detection of leukemia. Total leucocyte count in leukemias. Multiple myeloma. Blood Coagulation and disorders of hemostasis. Principles and methods of assessment of coagulation. BT, CT, Prothrombin time, partial thromboplastin time, thromboplastin regeneration time. Thrombocytopenia, thrombocythemia, platelet function test, platelet count. Clot retraction test. Platelet factor III Test. LE cell – definition, morphology causative agents. Various methods of demonstrating LE cells. Blood parasites. Malaria, LD bodies, microfilaria and methods of demonstration. Preparation of donor and collection of blood. Solution and apparatus used. Storage of blood. Preparation and storage of plasma. Preparation of packed red cells. Principles involved in Blood grouping. ABO system and the methods used. Factors influencing the results of blood grouping, Rh system. Rh antigen. Principles and methods used. Cross matching. Compatibility test, direct and indirect Coomb's test – Principle involved and the methods used. Blood transfusion and its Hazards.
- (K-ii) Community Medicine:** Natural History of Disease, Mode of transmission of disease, Disinfection-asepsis of the infective materials received in the Laboratory by using the appropriate disinfection methods, at the health centre level. Health services, Primary Health Care, Primary Health Centre, National Programmes of Health and disease eradication /control, Demography & Population control, Biostatistics, Environmental sanitation, Health education, Communication.
- (K-iii) Clinical Biochemistry:** Basic procedure, techniques and equipment used in clinical laboratory– concepts relating to the section of appropriate methods, supplies and reagents. Theory and types of electrophoresis, description of technique. Methods for detecting and quantitating separated zones of proteins. Role of electrophoretic technique in clinical biochemistry. Chromatography – Basic concepts, separation mechanisms and its role in clinical biochemistry, Qualitative and quantitative analyses. Overview of approaches to clinical laboratory automation and its goal- general concepts used in automated instruments and specific applications of these concepts to selected instruments. Criteria to be used in evaluating and selecting appropriate laboratory instrumentation. Definition and concepts of reference values and related terminology– selection of individuals for determination of population based reference values- criteria for specimen collection and procedure for collecting data. Analytical goals. Performance criteria for laboratory tests and quantitative means of assessing the diagnostic capabilities of tests (Clinical relevance) - appropriate and optional use of laboratory and data it generates. Goals of procedures and statistical techniques utilized for selecting and evaluating analytical quality and utility of procedures monitoring – quality assurance program. Overview of application of the computer in clinical Biochemistry laboratories. Specimen collection, processing and handling in clinical laboratory – sources of biological variation. Overview of metabolism of amino acids and proteins – current methodologists for their determination and identification in biological specimens – disease associated with alteration in or deficiencies of amino acids and proteins. Clinical Enzymology – Enzyme units, Enzymes of clinical importance and their methods of determination in biofluids. Importance of estimation of enzyme activity in various disease states. Overview of metabolism of carbohydrates – Methods for determining glucose, ketones, lactate, pyruvate reducing sugars and mucopolysaccharides and their clinical significance. Biochemistry, types, criteria parameters in diagnosis and prognosis of Diabetes mellitus. Overview of lipid. Importance of lipids in the body in body basic metabolic aspects and analytical importance. Disorders of lipid metabolism.

Lipoproteins patterns in disease – analytical methods and procedures applicable to detecting and monitoring such disorders. General dietary requirements of nutrients – factors affecting status, effects of poor nutrition – factors affecting status, effects of poor nutrition – analytical methods and recommendations for testing and assessing nutritional deficiency – Methods for assessing concentration of vitamins in biological samples. Essential trace elements and major elements in humans general requirements for laboratory assessment of trace elements including specimen collection, handling, selection of analytical methodology and establishing quality. Overview of current concepts in endocrinology RIA, ELISA, chemiluminescence assay procedure for hormones – physiological effects produced by normal and abnormal levels of various hormones. Thyroid function test and Adrenal function test. Overview of Biochemical roles of major electrolytes and blood gases and their changes in pathological states – relationship between major electrolytes and acid base balance – application of physical and chemical principles to biological system – laboratory measurements of electrolytes and blood gases. Acid base balance disorders. Introduction to molecular Biology. Recombinant DNA technology, Role of recombinant DNA technology as diagnostic tool. Polymerase chain reaction. Kidneys and their physiological role– Laboratory tests to assess, detect and monitor renal diseases. Overview of calcium and inorganic phosphate metabolism current laboratory analytical Laboratory tests and analytical methods used in identification and evaluation of hepatobiliary disorders. Stomach, pancreas and intestinal tract – procedure and tests used in the diagnosis and treatment of gastro intestinal diseases. Overview of porphyrins, their precursors, primary and secondary disorders of porphyrin metabolism – diagnostic laboratory methodologies including appropriate specimen collection and preservation techniques related to porphyrins Overview of clinical toxicology – Screening procedures for detection of drugs. Drugs of abuse and their evaluation. Toxic metals – Lead, Mercury, Arsenic, Cadmium and Chromium–Toxicity and their evaluation.

(K-iv) Histopathology And Cytology:- Definition, sources and types histological specimens, kinds of histological presentations. Labeling, fixation, properties of fixing fluids, classification and composition of fixing fluids. Advantages and disadvantages of secondary fixatives. Post chroming. Tissue processing, dehydration and cleaning. Embedding. Water soluble substances, embedding in paraffin nitrocellulose. Equipment for sectioning microtome, knife, honing and stropping. Types, care and use of microtome. Technique for sectioning – frozen section. Technique for sectioning – Paraffin embedded tissue. Errors in sectioning and remedies. Attaching blocks to carriers. Technique of processing bone for histological studies. Mounting and covering. Mounting media. Staining – theory, types of staining agent. Mordents and differentiation. H & E staining. Types of hematoxylin and its preparation. Eosin stock stain and other counter stain used. Demonstration of collagen, reticulin, elastin and fat. Demonstration of amyloid, glycogen and mucin. Demonstration of pigments and minerals (malarial, mercury, bile, lipofuscin, calcium, iron, copper). Stains for bacteria including AFB, fungi, amoeba. Principles of histo chemistry. And its application Demonstration of neuron, neuroglia, myelin and axon. Processing of eye ball for histology. Demonstration of fat, iron, amyloid, bile in large sections of tissue. Cytology – introduction, definition, types of cytological specimen, preparation of slide for microscopic studies, stains used. Museum technique. Preparation, setting up of and arrangement of museum. Preparation of cell blocks, mailing of slides. FNAC, definition, techniques involved in preparation of smear and staining. PAP smear. Demonstration of sex chromatin, barr bodies, Amniotic fluid study.

OR

L. Operation Theatre Techniques: Introduction to the course: Operation room set up; discipline; liability and responsibility as an Operation Room Assistant. Medicolegal Aspects of Anaesthesia, consent form, Basic Principles of Electricity and its application in O.T., I.C.U., and C.S.S.D. Fire and explosion hazards in the Operation Theatre. Personal hygiene and preoperative preparation of patients. Reception of surgical/trauma patients. Personal hygiene and first-aid Reception of a patient in operation suite, pre and post operative observation. Care of an unconscious patient. Various positions during operative procedures. ABC of resuscitation, cardiac arrest and its management. Aseptor, disinfectant. Anaesthesia machine. Electrocautery, suction apparatus. Monitor (E.C.G. Pulse) Defibrillators, pace makers, NIBP, SPO Endoscopies, O.T.Lights, tables, fracture table. Compressed and medical gas cylinders and pipelines, reducing valves. Manifold room duties and responsibilities layout, safety precautions. Vaporizers and their upkeep. O₂ therapy and humidification. Anatomy of skeletal system. Preparing different concentrations of solutions and drug dilutions. Setting up I.V.drips and infusion pumps. Technique of I/M, S/C, I/V injections. Identification and physical characteristics of commonly used anaesthetic agents. Premedicant, muscle relaxants, and I.V.fluids. Blood transfusion, Preparation and storage. Common antiseptics used in an O.T.preparation of antiseptic solutions in common use. Components, parts, care and maintenance of sterilizers. E.O. gas sterilizers. Aseptor, disinfectant. Cleaning, handling, packing of material for CSSD. Methods of fumigation of operation theatre and ICU. Sterilization of hospital furniture Sterilization of blunt and sharp instruments. Sterilization of rubber goods, gloves, polyethylene tubes, gum, elastic equipment. Ventilator basic knowledge. Sterilization of dressings/bandages. Sterilization of sutures, ligatures. Sterilization of Endoscopes. Sterilization of Electrical instruments/cautery. Preparation and packing of different surgical and anaesthetic sets. Collection, labelling and dispatch of various samples/biopsy material. Transportation of unconscious patient. Common positions for operative procedures. O.T. tables and lighting C arm, microscopes, endoscopes. Airway management and IPPR. Cardio pulmonary resuscitation. First Aid bandages, splints, plasters. Preparing POP splints, bandages. Collection, handling, dispatching of tissue, fluid, blood, urine samples for laboratory investigations, pathological or microbiological exam. Biomedical waste collection, transport, disposal and personal hazards.

Note: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.