



## 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)

#AIIMSRISH/Exam/23/1200

Date: 14 Oct. 2023

#### **Examination Notice**

Subject: - **Scheme of Examination and Indicative Syllabus for CBT Recruitment Exams for the posts of Pharmacist Gr.-II and Lab Attendant Grade-II-reg.**

All the candidates who have applied for the posts of *Pharmacist Gr.-II* and *Lab Attendant Gr.-II* against the advertisement no. 2017/145 & 2017/140 AND subsequent **re-open notices** dated **13<sup>th</sup> June-2023** of AIIMS Rishikesh; are hereby informed that:-

- The scheme & pattern of the recruitment examination for the said posts will be as follows: -

S.N.	Activity/ Description	Details
1	Date of Examination	TBD
2	Date of uploading admitcards	TBD
3	Venue of Exams.	TBD
4	Time duration of Examination	<b>03 Hours (180 Minutes)</b>
5	Type of Examination	Computer Based Test (CBT)
6	Number of Question Papers	Single ( <b>01</b> ) QP for each post
7	Scheme of Examination	<ul style="list-style-type: none"><li>• CBT multiple choice questions with four answer options and one of these four options will be the correct answer.</li><li>• There will be only one question paper for each post. The question paper will consist of <b>200</b> questions (MCQs) and the maximum marks will be 200.</li><li>• Each question will carry <b>01 (One) Marks</b> for every correct answer.</li><li>• There will be <b>0.25 negative marks</b> for each wrong answered question.</li></ul>
8	Minimum Qualifying marks	The qualifying marks in the Recruitment Examination will be <b>50%</b> for UR category candidates, <b>45%</b> for <b>OBC</b> category candidates and <b>40%</b> for <b>SC &amp; ST</b> 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 updates/corrigendum/Addendum 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](mailto: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)**  
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**परीक्षा विभाग (Examination Section)**

**Indicative Syllabus for recruitment Examination**

Post Name:-	Pharmacist Gr-II
<b>Pattern of examination:</b> <ul style="list-style-type: none"><li>• CBT Multiple Choice Questions with four answer options.</li><li>• Total <b>200</b> questions.</li><li>• <b>1</b> mark for each correctly answered question</li><li>• <b>Negative 0.25</b> marks for each wrong answered question.</li></ul>	
Proposed scheme of Examination	No. of Questions
<b>A. General Intelligence &amp; Reasoning</b>	<b>15</b>
<b>B. General Awareness</b>	<b>15</b>
<b>C. Quantitative Aptitude</b>	<b>15</b>
<b>D. English Comprehension</b>	<b>15</b>
<b>E. Pharmaceutics– I</b>	<b>5</b>
<b>F. Pharmaceutical Chemistry-I</b>	<b>5</b>
<b>G. Pharmacognosy</b>	<b>5</b>
<b>H. Pharmaceutics-II</b>	<b>5</b>
<b>I. Pharmaceutical Chemistry-II</b>	<b>5</b>
<b>J. Pharmacology &amp; Toxicology</b>	<b>5</b>
<b>K. Pharmaceutical Jurisprudence</b>	<b>5</b>
<b>L. Drug Store and Business Management</b>	<b>35</b>
<b>M. Hospital Pharmacy</b>	<b>35</b>
<b>N. Clinical Pharmacy</b>	<b>35</b>
<b>Indicative Syllabus</b>	
<p><b>A. General Intelligence &amp; Reasoning:</b> 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 &amp; decoding Numerical Operations, symbolic Operations, Trends, Space Orientation, Space Visualization, Venn Diagrams, Drawing interfaces, Punched hole/pattern -folding &amp; unfolding, Figural Pattern -folding and completion, Indexing, Address matching, Date &amp; city matching, Classification of centre codes/roll numbers, Small&amp; Capital letter/number coding, decoding and classification, Embedded Figures, Critical thinking Emotional Intelligence, Social Intelligence, other sub-topics, if any.</p> <p><b>B. General Awareness:</b> 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 &amp; scientific Research.</p> <p><b>C. Quantitative Aptitude:</b> 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 &amp; 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 &amp; Pie Chart.</p> <p><b>D. English Comprehension:</b> Candidates ability to understand correct English, his basic comprehension and writing ability, etc. would be tested.</p> <p><i>The questions in Part A, B, &amp; D will be of level commensurate with the essential qualification viz. Graduation and questions in Part C will be of 10<sup>th</sup> standard level.</i></p>	
<p><b>E. Pharmaceutics–I:-</b> Sterilization. Processing of Tablets. Processing of Capsules.</p> <p><b>F. Pharmaceutical Chemistry-I:-</b> Acids, bases and buffers, Antimicrobials and Astringents. Expectorants and Emetics. Antidotes.</p>	

- G. Pharmacognosy:** -
- (a) Laxatives
  - (b) Cardiotonics-
  - (c) Carminatives & G.I. regulators-
  - (d) Astringents.
  - (e) Drugs acting on nervous system.
  - (f) Antihypertensive
  - (g) Antitussives
  - (h) Antirheumatics
  - (i) Antitumour
  - (j) Antileptotics
  - (k) Antidiabetics
  - (l) Diuretics
  - (m) Antidysenterics
  - (n) Antiseptics and disinfectants
  - (o) Antimalarials
  - (p) Oxytocics
  - (q) Vitamins
  - (r) Enzymes
  - (s) Perfumes and flavouring agents.

**H. Pharmaceutics-II:- Biphasic Liquid Dosage Forms:** Emulsions, Dental and cosmetic preparation, Parenteral dosage forms, Ophthalmic products.

**I. Pharmaceutical Chemistry-II:-** Antiseptics and Disinfectants, Sulphonamides , Antileptotic Drugs , Antibiotics, Antifungal agents, Antimalarial Drugs, Tranquilizers, Antidepressant Drugs, Adrenergic drugs, Adrenergic antagonis, Cholinergic Drugs, Cholinergic Antagonists, Diuretic Drugs, Anti-Neoplastic Drugs

**J. Pharmacology & Toxicology:** Drugs acting on the central Nervous system, centrally acting muscle relaxants and anti-parkinsonian agents, Drugs acting on autonomic nervous system, Drugs acting on eye, Autacoids: Cardio vascular drugs, Drugs affecting renal function, Hormones and hormone antagonists, Chemotherapy of microbial diseases.

**K. Pharmaceutical Jurisprudence:** 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.

**L. Drug Store and Business Management:** Drug House Management, Inventory Control, Sales promotion, Market Research, Salesmanship, qualities of a salesman, Advertising and Window Display, Banking and Finance.

**M. Hospital Pharmacy:** - Drug Distribution system in Hospitals. Manufacturing: P.T.C. (Pharmacy Therapeutic Committee). Drug Information service and Drug Information Bulletin. Surgical dressing.

**N. Clinical Pharmacy:** - Disease, Physiological parameters with their significance. Drug Interactions, Adverse Drug Reaction, Drugs in Clinical Toxicity, Drug dependences, Bio-availability of drugs.

**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:-

Lab Attendant Grade-II

**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.

Proposed scheme	No. of Questions
<b>A. General Intelligence &amp; Reasoning</b>	<b>18</b>
<b>B. General Awareness</b>	<b>18</b>
<b>C. Quantitative Aptitude</b>	<b>17</b>
<b>D. English Language and Comprehension</b>	<b>07</b>
<b>E. Haematology, Blood Bank Techniques, Immunology and Serology</b>	<b>45</b>
<b>F. Clinical Chemistry/Biochemistry and Urine Analysis</b>	<b>45</b>
<b>G. Bacteriology, Parasitology and Elementary Histopathology</b>	<b>50</b>

**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 questions in Part C will be of 10<sup>th</sup> standard level.*

**E. Haematology, Blood Bank Techniques, Immunology and Serology: -**

**Haematology-** E.S.R. Principles – normals and interpretation Various Methods – Demonstration. Hemoglobin-formation fate and functions; Normal ranges, physiological and pathological variations. Various principals for methods in Hemoglobinometry; Standardisation. Interpretation of TLC & DLC. Leukocytosis, Physiological and Pathological, Arneht and setilling counts, Leukopenia, eosinophilia, lymphocytosis. Anaemia, R.B.C., morphology, normal and abnormal – hypochromia, anciocytosis, polychromasia, Cabot Rings, Basophilic, Stippling, Reticulocyte. The Hematocrit – macro and micro methods; Hematocrit ratio to Hb, Erythrocytic indices, Interpretation. Demonstration of Micohematocrit. Origin, formation and fate of Blood cells, Theories of Blood cell formation. Bone Marrow sites. Maturation of Blood cells–myeloid series. Maturation of Blood cells – lymphocyte and monocytic series and megakaryocytic series. Maturation of Erythrocytic series–Normoblastic and megaloblastic maturation. Theory of Blood coagulation. Factors involved. Extrinsic and Intrinsic Pathway. Cascade Theory. Various sample tests – Dike and Ivy method a/ Bleeding Time – Dike and Ivy method b/ Coagulation Time – Lee White Capillary and Slidy Method c/ Prothrombin Time–1 stage and 2 stage d/ Clot Retraction e/ Platlet Count f/ Thrombin Time g/ Partial Thromboplastic Time h/ F.D.P. Principle, interpretations and demonstrations. Reticulocyte count– various methods Interpretations and Demonstration. L.E. Principle – various methods. ANF Test. Demonstration. PMNS smear, Filiarial preparation, eosinophil count principle, interpretation and source of error. Hemoglobins– structure in detail, formations fate, abnormal Hemoglobins, methods of study – Sickle Test, Eb, electrophoresis test. Demonstration. Iron Metabolism. Classification of anaemias and mircrocytic (Iron Deficiency) anemia. Macrocytic anaemias including Pernicious Anaemia – causes, Lab. Findings. Hemolytic anaemias – Classification, Gen. Lab. findings. a/ Congential anaemias. Spherocytic

anaemia, Osmotic fragility. b/ Acquired hemolytic anaemias. Drug induced. c/ Hemoglobinepathies, Sickle cell Hb.C. Thalassemia. d/ P N H and cold hemolytic anaemia. e/ Enzyme deficiencies including tests. Aplastic anaemia, myelofibrosis. Polycythemia, Leukemias – acute and chronic. Purpores and Hemorrhagic disease, Hemophilia. Bone marrow aspiration. Staining and differential and reporting. Demonstration of Bone Marrow pictures.

**Blood Bank** -ABO System, antigens sub-groups of A Bombay O. Antibodies of ABO systems. Nature of antibodies. Anti A.B. Anti H. ABO testing slide and tube test. Reverse grouping. Discrepancies between cell and serum results, sources of error. Rouleux formation and methods of checking this. Rh system. Nomenclature, Due system and its significance, nature of Rh antibodies. Clinical significance phenotype and genotype. Rh grouping test. Slide or Rapid Tube Test. False positive and false negative results. Cross matching of Blood. Principles, Reasons for X match. Saline albumin, Coombs, Enzymes in testing. Labelling of tubes, Methodology, legal implications, Incompatible Crossmatch. Auto antibodies, plasma expanders, multiple myeloma etc. affecting a X-match. Difficulties in X- matching, and methods of investigations. Anticogulants for blood preservation, ACD, CPD, CPD A-1. Heparin advantages and Disadvantages. Shelf life of blood Changes taking place in blood on storage, Na, K etc. Reception of donors, indirect questioning of eliciting medical history. Types of donors, Rejection of donors in certain diseases and history of diseases. Physical examination of donor and test done on donor's blood for safe transfusion of blood. Technique and importance of sterile technique in drawing blood. Various donor reactions and their remedies. Facts of blood donations, precautions and care to be taken during and after blood donation. Need of giving refreshments to the donor. Emergency kit. Coombs Test – Direct and Indirect. Principle, explanation of procedure and sources of error. Control, interpretation and clinical application. Different types of coombs's sera. Transfusion reactions. Handing of Transfusion Reactions in B.B. Demonstration of Coombs Tests – Direct and Indirect. Hemolytic disease of the new born due to anti – D or ABO. Mechanism of the disease. Blood for exchange and tests done on cord blood. Other blood group systems. Kell Duffy, Mns and its importance. H.L.A. system, Enzymes in Blood Banking. Use of LISS. Antibody Titrations, reasons and methodology. Blood Component Therapy.

**Immunology and Serology**-Definition of Immunity and the immune system of the body immune responses. Basic definitions Basic aspects of the immune response. a/ Humoral division b/ Cellular division. Antigens and heptens. Types of antigen. Types of immunization Heterophile antigens, Alloantigens. Basic Structure, biological properties of immunoglobulins complement. Methods of detection and measurement of antibody and antigen: a/ Precepitation b/ Ring test (original C Reactive Protein) c/ Gel – Immune diffusion. Single and double immuno-diffusion. Redial Immunodiffusion, counter immuno-electrophoresis Agglutination test. Direct agglutination, Titration, Prozone reaction fibrile agglutinins. Slide agglutination and tube agglutination Widal tests, complement fixation test–principle Immunoflourescence test. Principle and interpretation of various, immunological tests done by the Laboratory. Pregnancy test, (including the historical background and Bioassays). A S O, CRP, RP, ANF and autoimmune disorder, Wider VDRL (Kahn, was erman's test TPI, TPI, RPCF, FLA, ABS). EIA and RIA – Principle; Viral Hepatitis and the markers. Syphilitic Serology – Kahn, VDRL, RPR. Indirect of passive agglutination a/ using RBC as carriers (Coated RBC) Pregnancy tests HBs Ag. b/ Latex coated particles fixation, Bentonite, Rheumatoid factor; Pregnancy latest (Gravindex) pregel ASL and CRPA. Complement fixation tests and Casserman Reaction. Immune Fluorescence tests Fluorescent labeled antibody techniques. F.T.A. for syphilis. ANA or ANF tests for L.E. Auto Immunity auto immune disease LE cell ANA or ANF. Hypogammaglobunemia Hypergammaglobunemia Cryoglobunemia. Organ transplantation.

## F. Clinical Chemistry/Biochemistry and Urine Analysis

**Clinical chemistry/ biochemistry**- Principles in brief of the various methodologies. One or two common methods in detail – principle, brief procedure, Reagent ingredients and functions sources of errors and precautions and standardization. Brief Metabolism and Clinical Interpretation. One Lecture – care and precautions, in general, to be used in Biochemical testing. Urea Methods: a/ Diacetyl Monoxime b/ Bertholets. Bilirubin: a/ Mallery Evlem b/ Jendrassk and gruff. Neonatal jaundice and direct spectrophotometric method of Bilirubin in estimation Advantages and Disadvantages. Creatinine. Enzymes – genera considerations, units of measurement, Factors effecting and types of assays. Amylase caraways method. Protein free filtrates. Creatinine estimation– Jaffe's reaction. Calcium. CSF. Physical, chemical and cytological examination methods and procedures used and clinical interpretes. Revision of the Basic concepts in Biochemistry, atomic and molecular symbols and formulae; various types of solutions, Molar, Normal definitions and calculations; various types of chemicals. SGOT & SGPT– Reitman frankel method. Alk P'tase. BLB method. Acid P'tase BLB method. Serum proteins. Total protein by Biuret method and Albumin by BCG method. Review of Beer34's Law and Spectro photometry. Principles of spectrophotometry and use of flame Photometer. Estimation of : a/ Na+ b/ K+ c/ Cl d/ HCO<sub>3</sub>. Lipid metabolism and estimation a/ Cholesterol b/ HDL Cholesterol c/ Triglycerides d/ Total Lipids. Fractional test meal and analysis of gastric contents. Augmented histammic test. Hallenders test. Transudetes and exudates; Phosporus. Quality Control. Acid, Base, PH, Indicators, Buffers. Electrolytes, Acid, Base and Water balance. Primary and Secondary standards. Revies of:- (a) Carbohydrate (b) G.T.T. and metabolism, intermediary metabolism and Ketoris (c) Urea metabolism and Kidney function test. (d) Billirubin metabolism and liver functions test. (e) Calcium and Phosphorus metabolism. (f) Proteins metabolism and electrophoresis. Brief understanding of : (a) T3 T4 TSH (b) CPK (c) VMA (d) Cortisols (e) Estrogen Progesteron (f) Hormones. Introduction to automation in clinical chemistry, Basic concepts, types of analysers.

**Urine Analysis**- Physical and Chemical examination of urine by strip – appearance colour specific gravity pH Alb. Sugar. Demonstration of technique; Chemical examination of urine by other methods. Albumin Sulfosalyclic acid method; Glucose – Benedict's method. Urinary sediments– Methods of obtaining sediment; Organic and Inorganic sediments: normal and abnormal sediments. Principles of Albumin tests with interpretation. 24– hour semiquantitative test for albumin; Bence Jones protein methodology. Principle of tests for glucose in urine– various methods. Bile pigments and urobilinogen in urine; Principle and various methods; Demonstration of Harrson's Spot Test; Metabolism of bile pigments; Interpretation. Watson's semiquantitative test and tests for Porphobilinogen; Demonstration of techniques. Porphyrine in urine– various tests; clinical significance; Demonstration of techniques. Ketone bodies in urine– principles and interpretation; Demonstration of

techniques. Occult Blood in urine; principles, various methods; sources of error; Demonstration of technique. Semen analysis; reasons for it and interpretation. Urine calculi; reasons for formation; clinical significance; Demonstration of technique and test. Semiquantitative and 24– hours tests for urinary calcium (Sulkowitch) and chloride (Fantu's); Demonstration of technique. Tests for Melanin, Indian PKU, Homogentisic acid; Demonstration of technique. Renal Function Tests– principle of concentration and dilution tests P.S.P. Dye Test. Addis Count – Various preservatives for 24– hours samples of urine, volume of urine in 24–hours; change in urine on standing.

#### **G. Bacteriology, Parasitology and Elementary Histopathology:**

**Bacteriology-** Structure and Biology bacteria; respiration; reproduction, nutrition and growth. Methods of sterilization with equipment used: (a) Physical (b) Chemical (c) Irradiation, etc. Basic constituents of culture media; various types of culture media; Liquid and solid media; Semisolid media– differential, selective, enriched. Methods of inoculation and streaking liquid; semisolid and plates aerobic and aerobic methods of culture. Review Gram's and AFB staining methods and capsular and Albert's stain; demonstration in all of these to be taken regularly in the 1st month. 6. Gram +ve Staphylococcus. Catalase and coagulase tests. Streptococci, Pneumococcus, bacitracin test, optochin and Bile solubility tests. Neisseria Enterobacteriaceae with classification, Code I, Code II, Metilities full code. E-Coli, Klebsiella and Enterbacter. Edwardsiella, Alkalescens dispar, serratia and Hafnia with Gillies code. Pseudomonas, Aeromonas, Mima, Alkaligenes. Proteus, Providence. Salmonella, Citrobacter, Arizina. Shigella Vibrios, Hanging drop. Non- intestinal gram negative bacteria; Hemophilus, Brucella; Pasterueulle, Bordetella; Bacterioides. Gram positive bacteria– (Corynebacteria; Listeria; Chosticia); Bacillus species. Spirochetes and Spirillum Mycobacteria. Virus Rickersia. Fungus. Normal flora of various areas in the body. Chemical disinfectants and methods of study of disinfectants. Antibiotics and sensitivity.

**Parasitology-** Protozon classification and general morphology. E.Coli, E-Histolytica and other Rhizopodia. Flagellates ex. Trichomonas, Giardia intestinalis, etc. Malaria Parasites, Life cycle– various stages. Hemoglagellates, Trypanosomes Leishmania. Nematode classification; Trichnella spiralis; Trichuris; Trichura. Round Worms and Pin Worm. Hook Worms and Strongyloides. Platyhelminths– classification and names with general outline. Tenia Saginata; T. Solium; H.Nana. Echinococcus Granulosus; D. Latum. Tissue Nematodes; Wuchcheria Bancrofti Brugia; loa loa. 13. Onchocera; Dracunculose medinensis. Methods of Examination of Stool for Parasities and for Protozoa.

**Elementary Histopathology-** Introduction to Histopathology sources and types of Histopathological specimens received, records, labelling and general rules when receiving a specimen. Fixation, properties of fixing fluids, Classification of fixatives, simple fixatives and compound fixatives. Decalcification. Processing– Dehydration, Principle. Various clearing agents, advantages and disadvantages of each. Processing Count, Clearing, Principle. Various clearing agents, advantages and disadvantages of each. Impregnation with paraffin. Type of paraffin. Advantages and Disadvantages. Embedding and Blocking. Impregnation; embedding and blocking with various water soluble masses. Various equipments and methods used in History for processing, Histokinette etc. Microtomes and Knives, Care. Hones, strops, honing and stropping, methodology and checking the results attaching blocks to carriers. Cutting and sectioning knife angle. Errors in sectioning and their remedies. Separating and identifying sections. Decalcification of Stains, types of stains, mordents and differentiations. Separating and identifying sections. H & E staining methods and principles involved in staining. Papanicoau staining. Skeletal system– various bones, joints Bone Marrow, face bones, skull, vertebrate, ribs, pelvis, Limbs. Joints– movable and immovable. Muscular System, Muscles, tendons, ligaments, diaphragm. Circulatory System, Heart, great blood vessels, arterial and veinous system, capillaries, foetal circulation. Lymphatic system. Respiratory system. Digestive System. Nervous System. Endocrine system.

**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.