

**DETAILED SYLLABUS FOR THE POST OF
LABORATORY ATTENDER (HOMOEOPATHY) -
DIRECT RECRUITMENT**

CAT.NO: 414/2022

Module	Topics	Marks
1	<p>Lab safety Introduction Signs and symbols used in a laboratory Handling and storage of chemicals in a laboratory. Laboratory Hazards-Physical, Chemical, Biological, Electrical, Fire, Radiation Laboratory Safety Precautions-Personal Hygiene Fire Extinguishers Biomedical Waste Management First Aid Practice in Laboratory</p>	2
2	<p>Laboratory Management Introduction Code of Ethics of a laboratory Professional Role of communication in laboratory Organization of a Laboratory Components of a Laboratory Lay out plan of a multi-room laboratory Organizational pattern of a Laboratory Familiarization of Request forms and report forms. Ordering and Utilization of supplies Maintenance of Stock Registers- Consumables, Non-consumables Accreditation and Certification of Laboratories. Accrediting Agencies- NABL, ISO, CAP, CRISIL - Bar coding and Total Laboratory Automation (TLA) Familiarization of Common Laboratory Software</p> <p>Clinical Pathology Introduction Importance, Common specimens, General guidelines for sample collection</p>	1
3	Urine Analysis	

	<ul style="list-style-type: none"> - Importance, Types of urine samples Methods of collection, preservatives Physical Examination - Chemical Examination-Sugar, Protein, Blood, Ketone bodies, Bile pigments, Bile salts, Urobilinogen - Microscopic Examination hCG test in Urine 	8
4	<p>Sputum Examination</p> <ul style="list-style-type: none"> - Importance, Specimen collection - Physical examination - Microscopic examination 	1
5	<p>Stool Analysis</p> <ul style="list-style-type: none"> - Importance, Specimen collection - Physical examination - Chemical examination- Occult blood, Reducing substances - Microscopic examination- Saline & Iodine mount 	2
6	<p>Semen Analysis</p> <ul style="list-style-type: none"> - Importance, Specimen Collection - Physical Examination, Liquefaction Time, - Microscopy- Total Sperm Count, Motility, Morphology - Chemical Examination-Fructose, Acid phosphatase 	2
7	<p>CSF and other body fluids</p> <ul style="list-style-type: none"> - CSF- Introduction - Specimen collection - Physical & Microscopic Examination - Chemical Examination- protein, glucose ,chloride (Name of method of estimation & clinical significance only) - Other body fluids - Recent advances in Clinical pathology 	1
8	<p>Introduction to Biochemistry</p> <ul style="list-style-type: none"> - Types of chemicals and preparation of solutions. - Types of specimens in clinical Biochemistry - Collection and processing of specimens for biochemical analysis - Types of assays- Endpoint and Kinetic (definition and example only) 	1

	- Cleaning of glass wares for biochemical analysis	
9	Instruments used in Biochemistry - Familiarise with Colorimeter, Spectrophotometer, Flame photometer, Centrifuge, Electronic balance, Distillation apparatus, Deionizer	2
10	Blood Glucose Estimation - Introduction to Diabetes - features, types, complications, - Types of samples- FBS, PPBS,RBS, Anticoagulant used - Methods of estimation- GOD-POD in detail - Normal value and Clinical Significance - Hyper and hypoglycaemia - Mention Glucometer Technique - GTT and GCT procedures, - Mention relevance HbA1C	2
11	Renal Function Tests - Introduction, Common tests included • Estimation of Blood Urea Mention common methods Urea-Berthelot method in detail, Normal value and Clinical significance Renal, Pre-renal, Post renal conditions of Uraemia • Estimation of S. Creatinine. Mention common methods. Jaffe's method in details, Normal value and Clinical significance • Estimation of Uric Acid. Mention common methods. Uricase method in detail. Normal value and Clinical Significance. - Mention Clearance tests- Urea and Creatinine - Mention Importance of Micro-albumin and Cystatin-C	2
12	Liver Function Tests • Introduction, Common tests included Bilirubin-Formation of Bilirubin Types of Bilirubin- conjugated and unconjugated Estimation of Bilirubin. Malloy- Evelyn method in detail. Normal value and Clinical Significance • Estimation of Total protein- Biuret method in details • Estimation of Albumin- BCG method in details Normal value and clinical significance of total protein and Albumin, A-G Ratio. • Other LFT Parameters- ALP, ALT, AST in brief.	4

13	<p>Lipid Profile</p> <ul style="list-style-type: none"> • Introduction - Relevance, tests included in the Profile • Estimation of S.Cholesterol. Mention common methods, CHOD-PAP method in detail, Normal value and Clinical Significance Mention Triglycerides, HDL, LDL 	1
14	<p>Other parameters of Diagnostic importance</p> <ul style="list-style-type: none"> • Serum Electrolytes- Serum Sodium and Potassium Normal value and Clinical significance • Clinically important Minerals- Calcium and Phosphorus (normal value and significance only) • Name Diagnostically important Hormones T3, T4, TSH, FSH, LH, Prolactin, progesterone • Name Clinically important enzymes- Acid Phosphatase, S. Amylase, GGT, • Name Cardiac markers- Troponin-I, Troponin-T CPK, CK-MB, LDH, SGOT • Name Tumour Markers- CA-125, CEA, AFP, CA-19.9, PSA, Beta hCG 	4
15	<p>Quality control in Biochemistry</p> <ul style="list-style-type: none"> - Introduction, Common terms used in Quality control, Errors - random and systemic , L.J. Chart, External QC and Internal QC 	1
16	<p>Automation and Recent advances</p> <p>Need for Automation, Advantages of Automation</p> <p>Types of Auto Analysers-Semi and Fully automated Electrolyte Analyser (ISE) in brief</p> <p>Advanced Diagnostic Methods in brief</p> <ul style="list-style-type: none"> - C.L.I.A., C.L.F.A, Turbidometry, Nephelometry, HPLC, Mention Point of care testing (POCT) 	1
17	<p>Introduction to Microbiology</p> <ul style="list-style-type: none"> • Classification of Microbes, pathogen, commensals, type of Infections, communicable diseases, Carriers Historical aspects in Microbiology 	1
18	<p>Structure and classification of bacteria</p> <ul style="list-style-type: none"> • Structure- Cell wall, flagella, fimbriae, capsule, spore, plasmid • Classification of bacteria based on morphology- Arrangement, Motility and oxygen requirement 	2
19	<p>Sterilization and disinfection</p>	

	<ul style="list-style-type: none"> • Importance of sterilization and Disinfection • Methods of sterilization Physical methods- Dry heat, Moist Heat Chemical methods- alcohols, aldehydes, gases Mechanical methods- Filtration, Radiation • Describe principle, parts, and use of - Hot air Oven, Autoclave • Disinfectants and Antiseptics and their application 	3
20	<p>Growth & Cultivation of Bacteria</p> <ul style="list-style-type: none"> • Bacterial growth and replication - Mention essential growth requirements- Temperature, PH, Gaseous requirements • Culture media Classification of culture media with examples • Preparation and use of common media Peptone water, Nutrient Agar, Blood Agar, Chocolate agar, Mac Conkey Agar • Bacteriological wire loop, Straight wire - Inoculation of Culture media- Liquid and Solid • Mention Streak, Stroke, Stab, Lawn culture - Mention Anaerobic techniques- Gaspak 	3
21	<p>Basic Identification Techniques</p> <p>Introduction Identification of bacteria</p> <ul style="list-style-type: none"> • Different methods • Detection of motility Name different methods Hanging drop method in detail • Staining - Principle, requirement, procedure and interpretation of Simple stain, Grams stain, AFB stain-Diagnostic significance • Biochemical tests- Coagulase, Catalase, IMViC 	2
22	<p>Immunology and its diagnostic applications</p> <p>Introduction</p> <ul style="list-style-type: none"> - Types of Immunity, Antigen, Antibody - Structure of antibody Types of antibody- Ig G, IgM, IgA, IgD, Ig E • Antigen Antibody reactions- Specificity, Sensitivity, Avidity, Pro-zone, post-zone, Titre Clinical applications of Agglutination, precipitation, flocculation, ELISA, Immuno-Fluorescence. 	3
23	<p>Laboratory Diagnosis of Common Bacterial diseases</p> <ul style="list-style-type: none"> • Collection, Processing and transportation of common specimens-Urine, Blood, Sputum, CSF, Stool, Pus, body fluids, swabs General considerations- Macroscopy, 	

	<p>Microscopy, Culture</p> <ul style="list-style-type: none"> • Mention common culture media and identification methods used. Antibiotic Sensitivity Testing (ABST)- Kirby Bauer Method • Common Disease and pathogens encountered -Typhoid, Tuberculosis, Cholera, Dysentery, Syphilis, Leptospirosis, Tetanus, Meningitis& UTI • Common Serological Techniques for diagnosis of Bacterial diseases- <ul style="list-style-type: none"> • ELISA & its commercial preparations - Immunochromatographic technique • WIDAL,RPR,-Procedure and interpretation 	4
24	<p>Laboratory Diagnosis of Common Viral diseases</p> <ul style="list-style-type: none"> • Introduction to viruses <ul style="list-style-type: none"> • Common viral diseases and pathogens encountered - AIDS, Hepatitis, Dengue, Chickun Guinia, Rabies, Infuenza, Mumps and Measles. • Diagnostic techniques for viral infections <ul style="list-style-type: none"> - Mention common Serological tests used,Latex agglutination, Card tests, ELISA, Tissue culture, PCR Technique 	1
25	<p>Laboratory Diagnosis of Common Parasitic diseases</p> <ul style="list-style-type: none"> • Introduction to parasites <ul style="list-style-type: none"> - Parasite, Commensal, Symbiosis, Host (Intermediate &Definitive host), Vector, Zoonosis • Classification-Intestinal & Blood Parasites <ul style="list-style-type: none"> • Common blood parasites and their lab diagnosis - Blood collection- - Time of collection - Preparation of smear-Thick and thin - Dehaemoglobinisation of thick smear 	2
26	<p>Lab Diagnosis of Malaria</p> <ul style="list-style-type: none"> - Disease,mode of transmission, hosts causative agent, types of malaria. - Examination of thick and thin smear-Morphological identification of different stages of parasite - Other stains used- JSB - Other methods- Card method , QBC 	2
27	<p>Lab Diagnosis of Filariasis-</p> <ul style="list-style-type: none"> - Disease, mode of transmission, host, and nocturnal habit <ul style="list-style-type: none"> - Lab diagnosis- wet smear examination, thick smear examination, Concentration 	1

	technique.	
28	<p>Lab Diagnosis of Intestinal parasites</p> <ul style="list-style-type: none"> - Introduction -Helminthic infections and parasites - Amoebiasis -Entamoeba histolytica- Disease, Mode of Transmission, Trophozoite & Cyst Lab diagnosis -Macroscopic examination Microscopic examination -Stained & Unstained preparation • Common Helminths- Tape worm, Round worm, Hook worm, Whip worm, Pin worm, - Lab diagnosis-Macroscopic & Microscopic examination - Concentration Techniques of Stool sample- Mention Floatation & Sedimentation methods 	1
29	<p>Histotechnology</p> <p>Introduction</p> <ul style="list-style-type: none"> - Methods of examination of Tissues and cells <ul style="list-style-type: none"> - Gross examination - Microscopic examination • Examination of Unfixed Tissue • Examination of Fixed Tissue - Collection of specimens - Biopsy - Autopsy - Fixation - 10% Formalin - Decalcification 	1
30	<p>Tissue Processing</p> <ul style="list-style-type: none"> • Steps in tissue processing - Dehydration Clearing - Impregnation - Embedding Microtomes-Rotary Microtome,-Cryostat - Section cutting - Mention role of adhesives - Staining -H&E Staining - Mounting of Tissue sections - Filing and storage of tissue sections 	2
31	<p>Diagnostic cytology</p> <ul style="list-style-type: none"> • Introduction • Types of specimens • Processing • Fixation • Staining Advantages and applications in diagnostic cytology 	2
32	<p>Basic Anatomy and Physiology</p> <p>Basic Structure of Cells , Tissues, Systemic Anatomy , Blood Pressure, Pulse</p>	5
33	<p>Diagnostic Laboratory, Common Laboratory</p>	3

	Glasswares and Equipments	
34	Blood and Phlebotomy , Composition of Blood, Functions , Blood Cells , Anticoagulants , Method of action of Anticoagulants	5
35	Haematology - Total cell counts and clinical significance, Peripheral Smear Examination , DC, Romanowsky Stains, Haemoglobin Estimation , Reticulocyte Count ,PCV , ESR ,Red Cell Indices , , Blood Coagulation, Tests of Coagulation , PT, APTT, TT	15
36	Blood Banking and Immunohaematology – Blood Groups –Major and Minor groups , Blood Grouping Techniques , Cross Matching Techniques , Transfusion Phlebotmy	7
<p>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 also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper</p>		