Government of Jammu and Kashmir
J&K Services Selection Board
Sehkari Bhawan Rail Head Complex, Jammu
(www.jkssb.nic.in)
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NOTICE

Subject- Syllabus and Criteria for CBT dated 27th Feb, 2018.

1. The syllabi for various items for which CBT (Computer based Written exam) is scheduled on 27th Feb, 2018 is enclosed herewith.
2. The candidates are also being intimated that there shall be negative marking for wrong answers (0.25 for each wrong answer) attempted in the said examination. There will be no viva for all these items.
3. The Syllabi and Criteria for other items scheduled on 27th Feb, 2018 (refer recruitment calendar on JKSSB website), have already been declared by the JKSSB.

Sd/-
Secretary
Services Selection Board
Jammu

No. SSB/Secy/Sel/2018/1180-83 Dated: 25.01.2018

Copy to the:-

1. Director Information, J&K Government, Jammu with the request to get the said notification published in at least three leading local newspaper of Jammu/Srinagar on three consecutive dates.
2. Private Secretary to the Chairman for information to Ld. Chairman.
3. I/C Web site.
4. Syllabus file.

Detail of Posts and Syllabus					
S. No.	**Advertisement No./ Item No**	**Name of the Department**	**Name of the post**	**Cadre**	**Syllabus Annexed**
1.	**06 of 2013/321**	Technical Education Deptt.	Drawing Instructor	Div. Kmr	**Annexure "A"**
2.	**06 of 2013/361**	Technical Education Deptt.	Drawing Instructor	Div Jmu	**Annexure "A"**
3.	**03 of 2012/208**	Ind. & Com (I&C)	Leather Technician	Div Jmu	**Annexure "B"**
4.	**06 of 2013/311**	Ind&Com	Leather Technician	Div. Kmr	**Annexure "B"**
5.	**01 of 2013/014**	Home Department (FSL)	Assistant Scientific Officer (Lie detector)	State	**Annexure "C"**
6.	**02 of 2014/149**	Industries and Commerce	Finishing Master	Div. Kmr	**Annexure "D"**
7.	**01 of 2011/256**	Industries & Commerce	Quality Control Inspector	Div Kashmir	**Annexure "D"**
8.	**03 of 2012/209**	Ind. & Com (I&C)	Incharge Work cum Production Centre	Div Jmu	**Annexure "E"**
9.	**01 of 2016/14**	Health and Medical Education Department	Jr. Lab Technician	Anantnag	**Annexure "F"**
10.	**01 of 2016/27**	Health and Medical Education Department	Jr. Lab Technician	Baramulla	**Annexure "F"**
11.	**01 of 2016/38**	Health and Medical Education Department	Jr. Lab Technician	Budgam	**Annexure "F"**
12.	**01 of 2016/54**	Health and Medical Education Department	Jr. Lab Technician	Ganderbal	**Annexure "F"**
13.	**01 of 2016/62**	Health and Medical Education Department	Jr. Lab Technician	Jammu	**Annexure "F"**
14.	**01 of 2016/87**	Health and Medical Education Department	Jr. Lab Technician	Kulgam	**Annexure "F"**
15.	**01 of 2016/95**	Health and Medical Education Department	Jr. Lab Technician	Kupwara	**Annexure "F"**
16.	**01 of 2016/111**	Health and Medical Education Department	Jr. Lab Technician	Pulwama	**Annexure "F"**
17.	**01 of 2016/125**	Health and Medical Education Department	Jr. Lab Technician	Ramban	**Annexure "F"**
18.	**01 of 2016/131**	Health and Medical Education Department	Jr. Lab Technician	Reasi	**Annexure "F"**
19.	**01 of 2016/138**	Health and Medical Education Department	Jr. Lab Technician	Samba	**Annexure "F"**
20.	**01 of 2016/151**	Health and Medical	Jr. Lab Technician	Srinagar	**Annexure "F"**

		Education Department			
21.	**01 of 2017/21**	Health & Medical Education Department	Laboratory Assistant	Anantnag	**Annexure "F"**
22.	**01 of 2017/29**	Health & Medical Education Department	Laboratory Assistant	Ganderbal	**Annexure "F"**
23.	**01 of 2014/040**	Forest Department	Forester	Div Kashmir	**Annexure "G"**
24.	**05 of 2015/258**	Forest Department	Forester	Div. Jammu	**Annexure "H"**

Annexure "A"

Jammu & Kashmir Services Selection Board

Drawing Instructor

Multiple Choice Based Written test

Reference Guidelines and Syllabus
120 Marks/120 Minutes

A) 25 Marks

Semiconductors, Diode and its application as rectifiers, various types of diodes, Operation of PNP and NPN transistors.
Digital logic gates, Number System,
Basics of measurement, Voltage, current and resistance measurement, Cathode ray oscilloscope-Its construction and block diagram.
Amplitude, frequency and phase modulation.
Introduction to Printed circuit boards
Thyristors and its applications.
Principle of operation and applications of various types of transducers.

B) Engineering Drawing. 10 Marks

1. Drawing office practice, Lines and Lettering.
2. Dimensioning.
3. Simple Geometrical Constructions used in Engineering Practice.
4. Scale
5. Principles of projection.
6. Sectional views.
7. Isometric views
8. Development of surfaces.
9. Screw threads and Threaded fasteners.
10. Keys and cotters.
11. Rivets and Riveted joints.
12. Couplings
13. Symbols and conventions.
14. AUTO CAD

2. General Workshop Practice 10 Marks

1. Carpentry Shop: Types of wood, functions and use of commonly used hand tools, care, maintenance of tools and safety measures to be observed. Wooden Joints, their relative advantages and uses.
2. Fitting Shop: Introduction to fitting shop tools, common materials used in fitting shop, Identification of materials.
3. Welding Shop: Introduction to welding and its Importance in engineering practice; Types of welding; common materials that can be welded, Introduction to welding equipment, Electric arc welding, Gas welding, Spot/Seam welding, TIG and MIG welding
4. Electric Shop-1: Common electrical materials, electrical safety measures, common electrical appliances.
5. Smithy shop: Demonstration and detailed explanation of tools and equipments used. Forging operation in smithy shop. Safety measures to be observed in the smithy shop.

6. Sheet metal shop-1: Introduction to sheet metal shop, use of hand tools and accessories.

C) .

Force system, Moment of force, centre of gravity, simple machines, torsion in shafts/ bars, Moment of inertia, Concept of pure/simple bending, bending moment and shear force.

10 Marks

Septic tank, drains and severs, Bathroom and WC, Road geometrics, Sewerage system, chain surveying, timber and wood based products, stone masonry, doors and windows, stair cases **10 Marks**

Properties of concrete, transportation of concrete, Analysis of rates, Cross drainage works, Bonds, foundations, flooring, Simple circular curves.

10 Marks

D) 20 Marks

information technology, its concept and scope.
Generation of computer, block diagram of computer, input/output devices.
Introduction to operating system such as MS DOS , windows.
Basics of networking- LAN, MAN, WAN and topologies.
MS-office (MS-word, excel and PowerPoint).
Internet and its applications.

E) 25 Marks

1. Basic Electrical Quantities.
   Basic concept of charge, current, voltage, resistance, power, energy and their units
   Conversion of units of work, power and energy from one form to another
2. Ohm's law, resistances in series and parallel.Kirchhoff's laws and their applications in solving electrical network problems. Basic idea about primary and secondary cells
3. Introduction to electromagnetism, Magnetic field around a straight current carrying conductor and a solenoid and methods to find its direction, force between two parallel current carrying conductors. Concept of hyteresis, loop and hysteresis loss
4. Faraday's Laws of electromagnetic induction. Lenz's law. Fleming's Right and Left Hand Rule
5. Difference between a.c and d.c. Concept of alternating current and voltage, equation of instantaneous values, average value, r.m.s value, form factor. Power factor and its practical significance. Advantages of 3 phase over single phase system.
6. Basic concept of --- conductors and insulators
7. Various Electrical Symbols used in Domestic and Industrial Installation and Power System as per BIS.
8. Study of electrical safety measures as mentioned in the Electricity Rules and shock treatment including first aid. Tools, accessories and instruments required for installation, maintenance and repair work Of Electrical equipment. Different types of wire Joints. Types of Domestic Wiring.
9. Elementary concept of an electrical machine. Comparison of generator and motor. Types of DC machines. Starter-Need and Purpose. Basic Principle and EMF

equation of Transformer. Transformer accessories. Types and uses of Single phase induction Motors. Types of Electrical measuring Instruments and their applications.

10. Main resources of energy, conventional and non-conventional. Substation Components. Power Tariff----Types
11. Definition: Luminous flux, solid angle, luminous intensity, illumination, luminous efficiency, depreciation factor, coefficient of utilization, space to height ratio, reflection factor, glare, shadow, lux.
    Laws of illumination.

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Annexure "B"
Jammu & Kashmir Services Selection Board
LEATHER TECHNICIAN
Multiple Choice Based Written test
Reference Guidelines and Syllabus
120 Marks/120 Minutes

LEATHER MANUFACTURE – 25 MARKS

Flaying, availability, classification and grading, defects, anatomical structure, chemical composition and constituents of hides and skins. Proteins, Curing and Preservation. Pretanning & Post tanning operations.

Different types of tanning (chrome, vegetable, oil, aldehyde, alum, zirconium & combination Tannage). Selection of wet blue. Different Operations carried out in dye house & crust yard. Waterproofing & water repellent agents. Finishing (Machine Operations). Finishes (composition, classification, materials& techniques).

ORGANIC CHEMISTRY- 09 MARKS

Purification of organic compounds (crystallization) distillation and sublimation

detection of elements(N.S and Halogens). Estimation of Hydrogen and sulphur.

Empirical and Molecular formulae. Isomerism (structural and stereo). Hydrocarbon saturated and unsaturated. Substitution and addition reactions. Chlorination of methane.

Aldehydes, Acids.

FOOTWEAR TECHNOLOGY- 18 MARKS

Foot Anatomy, Foot abnormalities, foot ailments, cures, Shoe lasts, Size systems, classifications/types of footwear, Designing and pattern cutting, Materials for insole, sole, adhesives, Pattern-layout, Clicking, Tools, equipments and machinery for footwear's, Elementary knowledge of layout, cost analysis and marketing strategy for footwear unit.

TANNERY WASTE MANAGEMENT -13 MARKS

Sources, composition, types and characteristics of tannery wastes, Hazards created by untreated tannery effluents. Recovery and reuse of chrome from wastes chrome liquor, Elementary idea of different treatment methods ,primary secondary and tertiary, Sludge treatment and disposal, model treatment plants, Various solid wastes, their composition and characteristics ,Environmental problems in handling tannery solid wastes, Utilization and disposal of tannery solid wastes, Manufacture of Glue and Gelatin, Manufacture of Leather boards .

LEATHER TRADE ENGINEERING -07 MARKS

Selection of Site, Location - geographical background. Water and Pits. Power supply & boiler. Transmission of Motion and Power (Belt drive, slipping of belts, power transmitted by belts).Drums and Paddles. General description/characteristics, foundation, installation, erection and commissioning of various tanning machinery like fleshing, unhairing, scudding, setting, shaving, splitting buffing, & stacking. Principles of working of various finishing machines, Conservation of Energy and Water

LEATHER PROCESS TECHNOLOGY -19 MARKS

Study of raw Cow & Buffalo hides and calf skins, their selection / grading as per end use.

General practices in vegetable tanning. Pit tanning and drums tanning. General practices in chrome tanning. Wet white – properties & general methods of manufacture.

Vegetable tanned and Chrome tanned sole leathers. Water proofing of sole leathers.

Belting leathers, Picking band leathers. Football & cricket ball leathers. Nubuck, suede & dry milled leathers. Finished Leathers and Composition of Finishes .Finished Leathers from Hair Sheep and Wool Sheep Skins. Exotic leathers, furs, Morocco, pleated leathers, book binding and chamois leathers. Reptiles leathers from Crocodiles, Lizards, etc. Dressing of fur skins. Up gradation of Leathers. Up gradation through special effects by Embossing, Snuffing & Buffing, General concepts of eco-friendly processing of leathers with cleaner beam house operations, Chrome / mineral free alternative tanning system, processing leathers with cleaner post tanning and finishing operations.

TESTING & QUALITY CONTROL- 12 MARKS

Curing and pre-tanning chemicals including spent liquors. Vegetable tanning materials and extracts. Chrome liquors and Chrome Tanning Components. Aluminum and Physical testing help in analyzing quality of leather as per norms. zirconium tanning salts, pH measurements, indicators and their use in testing. Physical testing of various types of leathers for tensile strength, elongation, dynamic water absorption, abrasion resistance, rub fastness, shrinkage. Use of instruments such as spectrophotometer, colorimeter, ion exchange resins etc in testing of tanning chemicals. Conservation of chemicals and water in the tannery. Analysis of limed and pickled pelts and chemical testing of vegetable tanned /chrome tanned leather. Analysis of chrome leather, vegetable tanned leather. Analysis of combination tanned leather for their constituent. Quality control in leather processing, role of testing in process and quality control specification (physical and chemical) from various types of leathers.

ESTIMATING & COSTING- 04 MARKS

Principles of calculating quantities of materials required for the manufacture of different types of footwear and leather goods, classification and distribution costs raw materials, labor, plant, overheads, wastes, packing and forwarding costs. Estimation of the costs of manufacturing different types of leathers and processes involved in leather manufacture

Price structure and marketing, foreign trade in raw hides and skins. Different types of leathers, stores management, packing and dispatch. Costing of various types of leathers, import, export policies, Incentives, drawbacks.

ANALYTICAL CHEMISTRY OF LEATHER MANUFACTURE- 18 MARKS

Principles of analytic methods employed in analysis of water. Effect of hardness of water on various processes in leather manufacture-Softening of water. Analysis of Various Chemicals and Auxiliaries used in Leather Processing. Salt, lime. Analysis of Fresh and Used Liquors of Beam House Processes. Analysis of Tanning Agents. pH measurement, indicators and their uses in testing. Instrumental Methods of Analysis used in Leather Chemistry. Spectrophotometry and colorimetry, ion-exchange resins etc. In testing of tanning chemicals.

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Annexure "C"

Jammu & Kashmir Services Selection Board

Assistant Scientific Officer (Lie detector)

Multiple Choice Based Written test

Reference Guidelines and Syllabus

120 Marks/120 Minutes

Unit-I **Marks: 15**

I. Nature and Scope of Criminology
II. Legal and Sociological Concepts of Crime

Unit-II **Marks: 30**

Major Historical and Contemporary Theories of Crime Causation:

i) Pre-classical, Classical and Neo-classical Theories
ii) Theories of Criminality: Biological Approaches
iii) Theories of Criminality: Psychological Approaches
iv) Theories of Criminality: Sociological Approaches
(a) Home and Family in relation to Crime
(b) Mass Media and Crime
(c) Theory of Differential Association
(d) Multiple Factor Approach to Crime Causation

Unit-III **Marks: 25**

I. Evolution, Nature and Theories of Punishment
II. Kinds of Punishment with special emphasis on Imprisonment and Capital Punishment

Unit-IV **Marks: 25**

I. Prison System in India
II. Police System in India

Unit-V **Marks: 25**

I. Prevention and Control of Crimes and Delinquency
II. Recidivism: Causes and Prevention
III. Drug Addiction
i) Extent, Causes and Effects
ii) Control of Drug Addiction
IV) Narco analysis and Lie Detector Tests: Constitutional Perspectives

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Annexure "D"

Jammu & Kashmir Services Selection Board

Finishing Master / Quality Control Inspector

Multiple Choice Based Written test

Reference Guidelines and Syllabus

120 Marks/120 Minutes

1. Introduction to textile – fibre, yarn, and fabric (20 Marks)
   a. Classification fo important textile fibres based on their origin and constituents
   b. Important properties of fibres – cotton, wool, silk, and artificial fibres
   c. Physical and Chemical properties
   d. Need and importance of identification of textile fibres.
   e. Care of cotton, wool, silk
2. Yarn Processing (20 Marks)
   a. Elementary Knowledge of spinning of – cotton, wool, silk.
   b. Chemical spinning – Melt spinning, Dry spinning, Wet spinning .
   c. Types of yarns and their properties – simple yarns:- single, ply, cord.
   Novelty yarns:- slub, boucle, chenille, nubs, corkscrew, grindelle.
3. Weaving Fundamentals (20 Marks)
   a. Types of looms – conventional looms, automatic looms, shuttles loom.
   b. Basic weaves – plain, twill, satin and sateen.
   c. Weaving Defects.
4. Finishes (20 Marks)
   a. Introduction, object and its importance
   b. Classification of various finishes
   c. Mechanical and chemical finishes
5. Application of colour (20 Marks)
   a. Dyeing - Definition, stages of dyeing
   b. Dyeing of – fibre, yarn, piece and garment dyeing
6. Printing (20 Marks)
   a. Definition, and methods and types of printing techniques
   b. Direct: block, Screen, Resist
   c. Batik: tie and dye

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Annexure "E"

Jammu & Kashmir Services Selection Board

Incharge Work cum Production Centre

Multiple Choice Based Written test

Reference Guidelines and Syllabus

120 Marks/120 Minutes

Wood Structure, identification, forest farming 20 Marks

Plant physiology, physical features of different types of wood, natural defects in wood, wood structure, wood chemistry:
Chemical constituents of wood, wood destroying insects, termities and their control, wood destroying fungi, types o wood,
Wood physics.
Density, specific gravity, porosity, fibre saturation point, capillary movement, calorific value, Nursery raising, morphology or bark, stem, leaf, flower, root.

Seasoning & Preservation of wood 10 Marks

Seasoning definition, necessity, seasoning defects, seasoning kilns, types of preservatives, natural durability of timber, fire protection preservatives.

Timber mechanics & Engineering 10 Marks

Physical and mechanical properties of wood, stress, strain hooks law, timber grading, prefabrication techniques, timber joints and mechanical fasteners, prevention of termite attack in buildings by constructional methods.

Wood composites & adhesives 10 Marks

Wood adhesives, types and classification, manufacturing process of plywood, particle board, bamboo mat board.

Wood working & finishing 10 Marks

Various wood working & finishing operations, carving tools and properties, portable power tools, wood working joints, powder coating, paints, oils, varnishes, logging tools.

Product design & fabrication 10 Marks

Concept of design, role of color, figure, texture, grain direction, time motion studies, role of multiple joints, nails, screws, fasterners and dowels, concept of antique furniture.

Repair & maintenance of wood working machines 10 Marks

Types of maintenance, total predictive maintenance, lubrication, concept of tribology, properties of specific lubricants, use of lubrication equipment like oil gun, grease gun.

Standardization Quality control, costing accounting 10 Marks

Statistical methods, Masures of central tendency (mean, mode, median), Instrumentation (vernier caliper, micrometer, radius gauge, Dail Indicator) Depreciation, cost estimation, journal, cash book.

Generic Skills & entrepreneurship Development 10 Marks

Task management (initiation, planning, execution), knowledge in problem solving Entrepeneurship (meaning and its needs), Entrepreneurship support system (district industries, NABARD, state financial corporation.

Basics of Engineering 10 Marks

Voltage, current, power & energy with their units. Difference between AC & DC, types of pumps & their applications, belt drive, gear drive

Pollution Control and Waste management 10 Marks

Ecosystem, energy flow in an ecosystem, water pollution, conservation of natural living resources, solid waste management, environmental education and awareness.

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ANNEXURE "F"

Jammu & Kashmir Services Selection Board

Laboratory Assistant/ Jr. Lab Technician

(Health & Medical Education Department)

Multiple Choice Based Written test

Reference Guidelines and Syllabus

120 Marks/120 Minutes

ANTOMY THEORY **10 Marks**

1. INTRODUCTION
- Different Parts of the human body, Common Anatomical Terms, Anatomical Positions and important planes.
- Animal Cell.
- Tissue of the body, classification and function.
- Primary tissues of the body.

2. SKELETAL SYSTEM
- Joints & Movements
- Muscle &Monce.

3. GASTRO-INTESTINAL SYSTEM
- Mouth and Pharynx.
- Salivary Glands and Tonsils.
- Oesophagus and Stomach.
- Location of different organs in the Abdomen in situ.
- Liver and Gall Bladder.
- Spleen and Pancreas.

4. GENITO-URINARY SYSTEM
- Kidney
- Ureters, Bladder and Urethra.
- Male Reproductive System.
- Female Reproductive System.

5. RESPIRATORY SYSTEM
- Thoracic Cavity, Pleura and Lungs.

6. CARDIO-VASCULAR SYSTEM
- Heart and Pericardium.
- Arterial System.
- Venous and Lymphatic System.

7. NERVOUS SYSTEM
- Meanings and cerebrospinal fluid.
- Brain, Spinal Cord and the Nerves.

8. LOCO-MOTOR SYSTEM
- Parts of Upper Limb: - Bones Land marks and important vessels.

PHYSIOLOGY THEORY **10 Marks**

1. BLOOD
- Composition and General function of Blood.
- Description of Blood Cells: - Normal Counts and function.
- Anti-congulants.

2. CARDIO-VASCULAR SYSTEM

- Functions of hart and blood vessels.
- Circulation:- Systemic Circulation
  Pulmonary Circulation.

3. RESPIRATORY SYSTEM
- Name of the Structure involved in respiration and their function
- External and Internal Respiration. How respiration and expiration are brought about.
- Transport of O2 and CO2 in the blood.
- Definition of Respiratory Rate, Tidal Volume, Vital Capacity, Cyanosis, Hypoxia.

4. EXCRETORY SYSTEM
- Functions of Kidney.
- Formation & Composition of Urine-normal and abnormal constituents.

5. SKIN
- Functions of Skin.

6. DIGESTIVE SYSTEM
- Composition and functions of Saliva. Mastication and deglutition.
- Functions of Stomach, Composition of Gastric Juice, Pancreatic Juice, Bile and Succusentericus.

7. ENDOCRINE GLANDS
- Definition, name and the hormones secreted by them.
- Major action of each hormone.

8. REPROCUCTIVE SYSTEM
- Male Genital System.
- Female Genital System.
- Names of Primary and Accessory Sex organs in make and female, Secondary Sexual characters in make and female.
- Functions of Ovary, formation of Ova, actions of Ovarian Hormones.
- Functions of Testis – Spermatogenesis and actions of testosterone.

9. BLOOD GROUP, ABO and Rh, basis for classification, basis for determination, importance and Blood Groups.

10. CEREBROSPINAL FLUID, Formation, composition and functions.

BIO-CHEMISTRY THEORY — 10 Marks

1. Elementary knowledge of Inorganic Chemistry – Atomic Weight, Molecular weight, Equivalent weight-Acids, basis and Salts-indicators-molar solutions, Buffer Solution, Titration (Acid Base) Definition of Solutions. Methods of expressing concentration: Dilution.

2. Elementary knowledge of Organic Chemistry-Organic Compounds. Aliphatic and Aromatic. Alcohols, Aldehydes, Ketones, Amines, Esters, Phenol, Acids Colloids etc.

3. Elementary of Analytical Chemistry-Instrumentation, Centrifuge Balances, Colorimeter, Spetrophtometer, FlamephotometerFluorimeter etc.

CLINICAL BIOCHEMISTRY THEORY — 15 Marks

1. Aims and Scope Biochemistry.

2. CARBOHYDRATES – Importance, Definition, Classification, some properties.

3. PROTEINS-Amino Acids, essential amino acids, peptides, denaturation of proteins, Physiologically important proteins, functions of plasma proteins.

4. LIPIDS-Definition, classification, steroids, examples.
5. NUCLEICACIDS-DNAAND RNA, their importance.
6. HAEMOGLOBIN.
7. ENZYMESAND CO-ENZYMES-Elementary.
8. GASTRIC JUICE collection, Acidities.
9. CARBOHYDRATE-METABOLISM- elementary aspects, definition of Glycolysis, Glycogenoysis Hormonal regulation of Blood Sugar, Diabetes-Mellitus-Ketosis, Gcosuria, Renal Glycosuria, Pentosuria.
10. METABOLISM OF LIPIDS – elementary aspects, Triglyeerides, Cholestrol. PlasmanLipoprotiens-Ketone bodies and Ketonuria.
11. PROTIEN METABOLISM – Formation of Urea. Creatinine Proteinuria. Edema, Transaminases.
12. WATER AND MINERAL METABOLISM – Dehydration, Calcium, Phosphorus, Sodium, Potassium, Chloride, Iron, Lodine, their physiological functions and disease state.
13. HARMONES – definition, functions of some important hormones.
14. Blood and cerebrospinal Fluid functions of Blood & CSF.
15. Urine Normal and abnormal tests.

MICROBIOLOGY AND PARASITOLOGY THEORY **20 Marks**

1. Requirement and use of Common Laboratory Equipment
   - Incubator, Hot Air Oven. Autoclave. Water Bath. Anacrobic Jar. Vaccum Pump. Media Pouring Chamber, Refrigerator. Centrifuge.
2. Microscope
   - Principal, Operation, Care and use of Microscope.
3. Sterilization and Disinfection
   - Classification and general principles of Sterilization. Physical. Chemical and Mechanical Methods. Disposal of contaminated Media, Syringes, Glassware, Apparatus.
4. Classification and Morphology of Bacteria
   - Brief Outline of :-
     - Structure of Cell, Capsule, Flagella and Spores.
     - Growth of Bacteria
     - Nutrition of Bacteria.
5. Staining of Bacteria
   - Simple, Grams, Ziehl-Neelsen, Albert. Spore Stain.
   - Composition and preparation of staining reagents.
6. Cultivation of Micro-Organisms-I (In detail)
   - Classification of Media, Composition of Laboratory culture Media and Special Media.
7. Cultivation of Micro-Organisms-II (In detail)
8. Identification of Bacteria:
   - Cultural Characters, Bio-Chemical reactions and serotyping.
9. Normal flora of micro-organisms in the human body.
10. Gram Positive and Gram Negative co---Staphylo----PenumococcusNeissriae (In brief).
11. Gram Negative Bacilli:

- Salmonella. Shigella. E. Coli. Klebsiella, Protein. Pseudomonas Vibro cholera Haemophilus. (In Brief)

12. Gram Positive Bacilli:
- Aerobic
  a) Corynebacterium diphtheria. (In Brief).
  b) Mycobacterium tubercoulosis and Mycobacterium leprae.
- Anacrobic bacilli – Clostridia. (In Brief).

13. Antibiotic Sensitivity test – Principles and methods of determination of sensitivity. Candida. Asperigillus. Dermatophytes. (In Brief).

14. HIV & AIDS:
- Brief Account

15. Immunity, Antigens, Antibodies and antigen antibody reaction and their applications in diagnosis of diseases.

16. Principles, Procedures and Diagnostic significance of agglutination. Precipitation. Neutralisation and complement fixation reactions.

17. Collection and processing of Clinical materials like Sputum. Urine Swabs. Stool. Blood, CSF and Aspirates.

CLINICAL PATHOLOGY AND HAEMATOLOGY — 25 Marks

THEORY:

1. Introduction of Haemotology.

2. Collection of Blood

3. Antieoagulants.

4. Red Cell Count:
- Haemocytometer
- Methods
- Caloculation.

5. White Cell Count. (Total Leucocyte Count):
- Morphology of White Cells.
- Normal Values.
- Romanowsky Stains
- Staining Precedures
- Counting Methods.

6. Absolute EosiNophil Count.

7. ErytrocyteSedimentaion Rate (ESR)
- Westergren's Method.
- Wintrobe's Method.
- Factors effecting ESR.
- Importance and Limitations.
- Normal Values.

8. Packed Cell Volume.
- Macro and Micro Methods.
- Normal Values.

9. Haemoglobin Estimation and its clinical importance.

10. Red Cell Indices
- Calculations and Importance.

11. Retienlocyte Count:
- Methods

- Appearance
- Normal Values.

12. Sickle Cell Preparation.

13. Osmotic Fragility Test:
- Scorning Test.
- Qualitative and Quantitative Test
- Normal Values.
- Factors allocating fragility.
- Interpretation.

14. Peripheral Blood Film

15. Preparation of Bone Marrow Smears

16. Coagulation Tests.
- Process of Coagulation.
- Factors of Coagulation.
- Tests of Coagulation.
  a. Bleeding time.
  b. Whole Blood Coagulation Time.
  c. Clot Retraction Test.
  d. Prothrombin Test.
  e. Toorniquet test.
  f. Platelet Count.

17. Urimanalysis.
- Normal Constituent.
- Physical Examination.
- Chemical Examination.
- Microscopic Examination.

18. CSF Examination.
- Normal and abnormal Cell Count.

19. Semen Analysis.
- Physical Preterition.
- Motility.
- Morphology.

20. Coomb's Test

HISTOTECHNOLOGY THEORY **14 Marks**

1. Introduction.

2. Cell, Tissues and Their functions.

3. Examination Methods of Tissues and Cells.

4. Fixation of Tissue:
- Classification of fixatives:
  a) Simple fixatives and their properties.
  b) Micro anatomical fixatives.
  c) Cytological fixatives.

5. Tissue Processing:
- Collection of Specimen.
- Labeling and Fixation.
- Dehydration.
- Cleaning
- Impregnation.

6. Section Cutting:
- Microtomes and their knives.
- Techniques of Section Cutting.
- Mounting of Sections.
- Frozen Section.

7. Staining.
- Dyes and their properties.
- Theory of Staining.
- Staining Techniques with haemotoxlin and cosin.
- Mounting of Sections.
- Common Special Stains.

8. Decalification.
- Fixation.
- Decalification
- Detection of end point.
- Neutralization and processing.

9. Exfoliative Cytology:
- Types of Specimen and preservation.
- Preparation and fixation of Smears.
- Papanicolaou Staining Technique.
- Sex Chromatin Staining.

10. Museum Technique.
- Reception of Specimen.
- Preparation of Fixation.
- Restoration of Colour.
- Preservation.
- Presentation.

11. Autopsy Technique:
- Assisting in Autopssy.
- Preservation of Organs & Processing of Tissues.

12. Waste disposal and safety in Laboratory.

LABORATORY MANAGEMENT AND ETHICS 06Marks

1. Role of the Laboratory in the Health Care Delivery System:
- General
- Human Health & Diseases.
    a. Types of Diseases.
    b. Process of Diagnosis
    c. Laboratory at different levels.
    d. Duties and responsibilities of Laboratory personnel.

2. Laboratory Service in the Health Care Delivery System in India.
- Laboratory Service in India.
- The Health Administration System in India.
    a. At the National Level.
    b. At the State Level.
    c. At the District Level.
    d. At the Village Level.

e. Voluntary health Organizations in India.

3. Laboratory Planning:
- General Principals.
- Laboratory Goals.
- Operational Data.
    a. Market Potential
    b. Hospital/Laboratory relatives.
    c. Competitions.
    d. Laboratory Trends.
    e. Planning at different levels.
    f. Guiding Principles for planning Hospital laboratory Services:
        - Factors.
        - Guiding Principles for Planning.
        - Functional Criteria.
        - Operational demand.
        - Sections of a Hospital Laboratory.
        - Common area.
        - Design aspect.
        - Space requirement.
    g. Planning for a basic health Laboratory.

4. Laboratory Organization (Laboratory Management Techniques):
- General Principles.
- Components and functions of a laboratory.
- Staffing the Laboratory.
- Job Descriptions.
- Job Specification
- Work schedule
- Personnel re-arrangement and work load assessment.

5. Care of Laboratory Glassware, Equipments and Instruments and Chemicals etc.
- General Principles.
- Care and cleaning of glassware.
- Making simple glass wares in Laboratory.
- Care of equipments, instruments and apparatus etc.
- Laboratory Chemicals, their proper use and care.
- Labelling.

6. Specimen Handeling
- General Principles.
- Collection Techniques and containers for specimen.
- Types of Specimens.
- Specimens entry.
- Specimens transfer and distribution and re-assignment.
- Specimens disposal.
- Specimens Preservation.

7. Laboratory Safety.
- General Principles
- Laboratory Hazards.
- Safety Programmes.
- First-Aid

8. Blood Bank. 10 Marks

i) Introduction and Historical aspects.
ii) Human Blood Group Antigens, their inheritance and antibodies.
iii) ABO Blood Group System.
   a) Sub-Group
   b) Source of Antigens, types of antibodies.
iv) Rh. Blood Group System.
   a) Nomenclature and types of Antigens.
   b) Mode of inheritance.
   c) Types of Antibodies.
V) Other Blood Group System.
Vi) Techniques of Grouping and Cross Matching.
Vii) Blood Collection.
   a) Selection and screening of Donor.
   b) Collection of Blood.
   c) Various anticoagulants used.
   d) Storage of Blood.
Viii) Blood Transfusion:
   a) Procedures and Complications.
   b) Blood Transfusion Reaction, Types, Investigation and Presentation of Transfusion Reaction.
IX) Coomb's Test.
X) Organization, Operation and Administration and Blood Bank.

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ANNEXURE "G"

Jammu & Kashmir Services Selection Board

Graduation Level

Multiple Choice Based Written test

Reference Guidelines and Syllabus

120 Marks/120 Minutes

Unit-I **GENERAL ENGLISH** **15 Marks**

(I) Tenses
(II) Rearranging of jumbled sentences.
(III) Narration
(IV) Models
(V) Articles
(VI) Comprehension with blanks to be filled in with Phrases, Pronouns, Homonyms / homophones.
(VII) Clauses
(VIII) Synonyms and antonyms
(IX) Pairs of words and their use in meaningful sentences.
(X) Idioms and phrases.
(XI) Uses of Prepositions.

Unit-II **GENERAL KNOWLEDGE AND CURRENT AFFAIRS** **25 Marks**

- Important dates in Indian History / Freedom struggle, different dates and events.
- First in world (Adventure, Sports, Discoveries).
  First in India (Adventure, Sports, Discoveries).
- Popular names of Personalities (Religion, Politics, Scientific discoveries, Geographical,
  Sports, History)
- The Newspaper world – (Current Dailies & Weeklies of India).
- Books & Authors – General
- Languages.
- Capitals & Currencies.
- United Nations Organisations – Veto Powers
  No. of Countries as its Members.
  Principal organs and their functions.
- SAARC, ASEAN.
- Everyday Science
- World famous Awards - (1. in Science)
  (2. in Literature)
  (3. in Sports)
- National Awards - (1. in Science)
  (2. in Literature)
  (3. in Sports)
- The world of Sports
- Climate & Crops in India.
- Democratic institutions

- Forms of Government
- Political & Physical divisiions of world & India
- Important rivers & Lakes in India.
- Current Events of Natioal and International Level.
- Role of Mathematics in Economics.
- Agriculture in economic development; Industrialization and economic development.
- Indian Foreign Trade
- New economic reforms and growth of foreign trade.
- Inflation – Concept and types; Causes and consequences

UNIT-III GENERAL KNOWLEDGE WITH SPECIAL REFERENCE TO J&K

20 Marks

(I) Abbrevations, Important dates, popular names of personalities and their achievements/
Contribution (National and International).

(II) Constitution of J&K – Formation, Fundamental rights, Directive Principles.

(III) Weather, Climate, Crops, Means of Transport.

(IV) Important power projects and their impact on State Economy.

(V) Rivers and Lakes.

(VI) Important Tourist Destinations.

(VII) History of J&K State.

(VIII) Historical places of the State and their importance.

(IX) RTI Act.

(X) Indus Water Treaty and its impact on State economy.

Unit-VI GENERAL SCIENCE 20 Marks

(i) Various sources of energy; conventional sources of energy; improvement in technology for using conventional source of energy (Biomass and wind energy)

(ii) Non-conventional sources of energy (Solar energy,Tidal energy).

(iii) Mechanics, Rest, motion, Velocites, acceleration, Newton Laws of motion,

(iv) Voltage, Current, Resistance, Power, D.C Batteries

(v) Waves, light as a wave, Sound waves, Transverse and longitudinal waves.

(vi) Structure of Atom

(vii) Solids, Liqids and Gases(Basics)

(viii) Life processes: Nutrition and its types, Respiration, Transportation of water, food and minerals in plants.

(ix) Vitamins- Dieases related to vitamin deficiency.

(x) Environmental pollution.

(xi) Ecosystem – Its components, Food chains and Food webs.

(xii) Ozone layer, its depletion, Green House Effect.

(xiii) Importance of water in life

Unit-V MENTAL ABILITY TEST 20 Marks

(I) Number series.

(II) Letter series.

(III) Coding decoding.

(IV) Direction sense.

(V) Blood relations.

(VI) Mathematical reasoning.

(VII) Speed, Distance and Time.
(VIII) Statements and conclusions.
(IX) Logical Reasoning.
(X) Mental Reasoning.

Unit-VII **Computer Applications** **20 Marks**

(I) Fundamentals of computer sciences
(II) Hardware & Software
(III) Input and output devices
(IV) Operating system
(V) M.S Word,M.S Excel, M.S Acess and Powerpoint Presentation
(VI) E_mail & Internet

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ANNEXURE "H"

Jammu & Kashmir Services Selection Board

10+2 Level

Multiple Choice Based Written test

Reference Guidelines and Syllabus

120 Marks/120 Minutes

Unit-I GENERAL ENGLISH **15 Marks**

(i) Paragraph writing / Comprehension
(ii) Editing / Proof Reading.
(iii) Rearranging of jumbled sentences
(iv) Dialogue
(v) Narration
(vi) Models
(vii) Articles
(viii) Paragraph writing with blanks to be filled in with the following Phrases, Pronouns, Homonyms / homophones, Tenses.
(ix) Clauses
(x) Punctuation
(xi) Synonyms and antonyms
(xii) Pairs of words and their use in meaningful sentences.
(xiii) Idioms and phrases.
(xiv) Uses of Prepositions

Unit-II MATHEMATICS **15 Marks**

(i) Problems on finding Surface areas and volumes of combinations of any two of the following cubes, cubiods, spheres, hemispheres and right circular cylinders / cones. Frustum of a cone.
(ii) Problems involving converting one type of metalic solid into another and other mixed problems.
(iii) Profit and loss
(iv) Simple / Compound interest.
(v) Linear equations with two variables.
(vi) Progression / BODMAS
(vii) Probability: Simple problems on Single event.

Unit-III HISTORY **10 Marks**

(i) Revolt of 1857 - Causes and Effects.
(ii) Rise of National Movement - Factors.
(iii) Formation of the Indian National Congress in 1885 and Role of Moderates.
(iv) Factors leading to the rise of Exremism in the Congress with special reference to the Partition of Bengal.
(v) Important dates and historical events with reference to India
(vi) Boycott and Swadeshi Movement.
(vii) Rise of Muslim League in 1906 : Cause.
(viii) Khilafat Movement and the Non-Cooperation Movement.
(ix) Quit India Movement.

(x) Independence and Partition of India.

Unit-IV CIVICS **10 Marks**

(i) Fundamental Rights
(ii) Fundamental duties.
(iii) Directive Principles.
(iv) Origin of democracy and its types. Direct and Indirect Democracy, Hindrance to Democracy.
(v) Public opinion.
(vi) Representaion.
(vii) Franchise.
(viii) Secret Ballot.
(ix) Nomination.
(x) Symbol.
(xi) The Campaign
(xii) Presidential elections.
(xiii) Languages
(xiv) Cities and Villages.
(xv) The United Nations.

Unit-V GEOGRAPHY **15 Marks**

(i) Change of Seasons/ Planets/ Solar System/ Longitude - Latitude. Types of forests (with special reference of J&K State)
(ii) Conservation and protection of forests.
(iii) National / Zoological Parks and wildlife sanctuaries (Reference of J&K Sanctuaries and National Parks).
(iv) Water resources. Sources of Water (with special reference of J&K State), Uses of water Resources. Conservation and management of water resources.
(v) Rainwater Harvesting.
(vi) Transport.
(vii) Roads (Different routes of J&K State)

Unit-VI GENERAL SCIENCE **15 Marks**

(i) Gravitation / Heat / Light / Matter / Acids / Salts / Elements / Cells.
(ii) Various sources of energy; conventional sources of energy; improvement in technology for using conventional source of energy (Biomass and wind energy)
(iii) Non-conventional sources of energy (Solar energy, Energy from sea).
(iv) Physical properties of metals and non-metals.
(v) Chemical properties of metals like action of water, air, acids, salts; Reactivity series of metals.
(vi) Occurance of metals; their extraction, enrichment of ores. Extraction of metals in accordance with activity series; refining of metals.
(vii) Life processes: Nutrition and its types, Respiration, Transportation of water, food and minerals in plants, Excretion with reference to plants and animals.
(viii) Environmental pollution.
(ix) Ecosystem – Its components, Food chains and Food webs.
(x) Ozone layer, its depletion, Green House Effect.
(xi) Mendal's contribution and experiments on pea plant.

(xii) Types of reproduction in Plants and Animals.
(xiii) Classification of Plants and Animals.

Unit-VII (A) GENERAL KNOWLEDGE AND CURRENT AFFAIRS 10 Marks

Abbreviations, Important Dates, Popular Personalities, Geographical Discoveries, Books and Authors, Principal Languages of India, Capitals and Currencies of Countries, United Nations Organisation, Members of United Nations Organisation (UNO), Other International Organisations and Groups, Members of SSARC, ASEAN, BRICS AND G-7, Space Programme of India, India's Automic Research Programme, Awards, Honours and Prizes, Seven Wonders. The World of Sports, Exports and Imports, India GDP, Per capita Income, Thermal / Nuclear/ Hydro Power Plants in India.

(B) GENERAL KNOWLEDGE WITH SPECIAL REFERENCE TO J&K 10 Marks

(i) Important dates, Popular names of personalities and their achievements / contribution.
(ii) Constitution of J&K with reference to constituent Assembly.
(iii) Centre-State relationship.
(iv) Weather, Climate, Crops, Means of Transport.
(v) Important projects and their impact on State Economy.
(vi) Rivers and Lakes.
(vii) Important Tourist Destinations.
(viii) History of J&K State.
(ix) Historical places and their importance.
(x) Flora and Fauna of J&K State.

Unit-VIII MENTAL ABILITY TEST 20 Marks

(i) Number series
(ii) Letter series
(iii) Coding decoding
(iv) Direction sense
(v) Blood relations
(vi) Mathematical reasoning
(vii) Speed, Distance and Time
(viii) Statements and conclusions.

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