

SYLLABUS THE POST OF LAB TECHNICIAN (PSYCHOLOGY)

Section-A

70 Marks

Domain Knowledge

Unit I Psychology as a science- Definition of Psychology , Historic development of the definition of Psychology, Psychology as a Behavioral Science, Goals of Psychology, Nature of Psychology as a Science, Scope of General Psychology, Broad fields of Psychology

Physiological Psychology - Introduction to Physiological Psychology, Meaning of Physiological psychology, Discussion of Mentally and Physical Relation, Nature & Scope of Physiological Psychology, Internal Environment of Body, Introduction of Internal Environment of Body, Metabolism, Enzymes, Vitamins, Hormones, Genes, Neuron Cell, Meaning of Neuron Cell – Structure and Function, nerve Impulse, Nervous Systems, Central Nervous System (CNS), Cerebellum Structure and Function, Cerebrum Structure and Function, thalamus & hypothalamus, spinal Cord, Peripheral Nervous System (PNS), Somatic Nervous System, Autonomic Nervous System, Sensory Mechanisms, Motor Mechanism, Physical bases of Perception, Motivation, Emotion (Lie detection), Adoptive Behaviour, Electroencephalograph, Evoked potentials.

Unit II Systems and Theory of Personality – Gestalts, Meaning, Principal of Gestalt Psychology, Laws of Organization in Perception, Contribution of Wertheimer, Kohler, Koffka, Filed Theory, Filed Theory and Life Space Theory, contribution of Kurt Lewin, Psycho-Analysis-I,

Basic Introduction of Psycho Analysis, Principal of Psycho-Analysis (Sigmand Frued) Psycho-Analysis-II , Adler's Individual Psychology, Principals of Psycho-Analysis by Adler, Jung's Analytical Psychology, Contribution of Alder and Jung in Psychology, Hormic Psychology, Introduction of Purposivism, Theory of Medougall

Unit III Criminal Psychology - Meaning of Crime Psychology, Nature of Crime Psychology, Types of Crime Psychology, Scope of Crime Psychology, Theory of Crime, Economical Theories, Political Theories, Sociological Theories, Psychological Theories, Reason of Crime – Economic, Political, Sociological Psychological, Juvenile Crime, Meaning of Juvenile Crime and Causes of Juvenile Crime – [1]Social [2] Psychological [3] Economics, Prevention of Crime, model of Crime Prevention

Psychological tests- Definition and Uses of Psychological Testing, Characteristics of a Good Psychological Test, Kinds (Types) of Test, Intelligence Tests,

Unit IV Child Psychology Introduction , definition, and Nature of Child Psychology, Scope of Child psychology, importance of Child Psychology, Method of Child Psychology, Observation, Event Note, autobiography, Growths and Development, Meaning of growth and development,

Characteristics of growth and development, Disciplines and Authority, Meaning of Discipline and Authority, Various nature of Home Authority, Characteristics of good

Discipline, Characteristics of proper Punishment, Conflicts and Frustration, Meaning of conflicts and Frustration, Reasons of conflicts and Frustration in Child, Remove of Frustration

Unit V Cognitive Psychology - Definition and Nature, Scope & Methods, Important of Cognitive process, Theory of Cognitive Psychology, Contemplation and Problem Solve, Definition, Nature types of Cognitive Lesson, self Contemplation, Realest, Meaning, nature of problems solving, Method aim care of problem solving, The Concept and Memory, Nature and Important of Concept, Type of Concept, Meaning and Steps of Memory, Type of Memory, Creative and logic, definition nature of Creative, Steps of Creativity, Meaning, nature of logic, Types of Logic, Decision making process, difference of Decision making, Self research in decision making, Bias and error in decision making

Section-B

30 Marks

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| Unit A | General Knowledge – Current events, sports, history, geography, basic economics, general politics, Indian Constitution, Science environment, General awareness of Haryana etc |
| Unit B | Questions on Mathematics of matriculation standard- Number system, simplification, decimals, corrections, simple and compound interest, percentage, average, profit and loss, discount, mensuration, Time & work and time & distance etc. |
| Unit C | English, covering Grammar- Prepositions, adverbs, conjunction, direct/indirect speech, singular & plural, tenses, antonyms/synonyms etc |
| Unit D | Questions on Reasoning |
| Unit E | Questions on analytical Ability |

SYLLABUS THE POST OF LAB TECHNICIAN (CHEMISTRY)

Section-A

70 Marks

Domain Knowledge

Unit A Atomic and molecular structure; Schrodinger equation. Particle in a box solutions and their applications for conjugated molecules and nanoparticles. Forms of the hydrogen atom wave functions and the plots of these functions to explore their spatial variations. Molecular orbitals of diatomic molecules and plots of the multicenter orbitals. Equations for atomic and molecular orbitals. Energy level diagrams of diatomic. Pi-molecular orbitals of butadiene and benzene and aromaticity. Crystal field theory and the energy level diagrams for transition metal ions and their magnetic properties. Band structure of solids and the role of doping on band structures.

Unit B Spectroscopic techniques and applications; Principles of spectroscopy and selection rules. Electronic spectroscopy. Fluorescence and its applications in medicine. Vibrational and rotational spectroscopy of diatomic molecules. Applications. Nuclear magnetic resonance and magnetic resonance imaging, surface characterisation techniques. Diffraction and scattering.

Unit C Intermolecular forces and potential energy surfaces Ionic, dipolar and van Der Waals interactions. Equations of state of real gases and critical phenomena. Potential energy surfaces of H₃, H₂F and HCN and trajectories on these surfaces.

Unit D Periodic Properties Effective nuclear charge, penetration of orbitals, variations of s, p, d and f orbital energies of atoms in the periodic table, electronic configurations, atomic and ionic sizes, ionization energies, electron affinity and electronegativity, polarizability, oxidation states, coordination numbers and geometries, hard soft acids and bases, molecular geometries.

Unit E Stereochemistry Representations of 3 dimensional structures, structural isomers and stereoisomers, configurations and symmetry and chirality, enantiomers, diastereomers, optical activity, absolute configurations and conformational analysis. Isomerism in transitional metal compounds.

Organic reactions and synthesis of a drug molecule Introduction to reactions involving substitution, addition, elimination, oxidation, reduction, cyclization and ring openings. Synthesis of a commonly used drug molecule.

Section-B**30 Marks**

- Unit A General Knowledge – Current events, sports, history, geography, basic economics, general politics, Indian Constitution, Science environment, General awareness of Haryana etc
- Unit B Questions on Mathematics of matriculation standard- Number system, simplification, decimals, corrections, simple and compound interest, percentage, average, profit and loss, discount, mensuration, Time & work and time & distance etc.
- Unit C English, covering Grammar- Prepositions, adverbs, conjunction, direct/indirect speech, singular & plural, tenses, antonyms/synonyms etc
- Unit D Questions on Reasoning
- Unit E Questions on analytical Ability

SYLLABUS FOR THE POST OF LAB TECHNICIAN (MEDICAL LAB TECHNOLOGY)

Section-A

70:Marks

Domain Knowledge

Unit-I: Health Education; Introduction to Health, Health providers, Health Care Delivery System, Health Problems, Wellness, Ageing and FirstAid.

Fundamentals of Medical Laboratory, Instruments & Reagents; Introduction to Laboratory, Code of conduct of medical laboratory personnel, Organization of clinical laboratory and role of medical laboratory technician, Safety measures, Professional Ethics.

Unit- II: Medical Biochemistry; Chemistry of Lipids, Introduction of Enzymes, Vitamins, Diabetes, Photcolorimeter.

Fundamentals of Microbiology; General characters and classification of Bacteria, Growth and Maintenance of Microbes, Sterilization and Disinfection, Culture Media.

Diagnostic Biochemistry; Diabetic Profile and Liver Function Test, Renal and Pancreatic Function Test, Cardiac Function Test, Gastric Function Test, Acid Base Balance.

Unit-III: Clinical Endocrinology and Tumor; Hormones, Thyroid Function, Infertility, Growth Hormones, Tumor Markers.

Unit-IV: Basic Haematology; Composition of blood and its functions, Origin, Development, and morphology of Blood cells, Basic concepts of Anaemia, Leukaemia, and hemorrhagic disorder, Normal Cell, Cell Injury- types of cell injury, etiology of cell injury, morphology of cell injury, cellular swelling, Cell death : types- autolysis, necrosis, apoptosis & gangrene, Cellular adaptations-atrophy, hypertrophy, hyperplasia & dysplasia.

Blood banking & Immunohaematology; Methods of estimation of Haemoglobin, Methods of determination of PCV, Blood Group- methods of grouping and ungrouping, Blood transfusion and hazards, Testing Donor Blood, Blood Donor Records, Storage & Transport, Storage & Transport.

Unit-V: Clinical Pathology (body fluids) and Parasitological; Reception of Patients, The Microscope- Types, Parts, Cleaning, and Care, Examination of Urine, Examination of Body Fluids, Clinical Biochemistry Definition of Antigen and Antibody, Clinical Enzymology, Disorders of Carbohydrates, Nutritional Disorders, Liver function test

Immunology; Antigens and Antibodies, Types of Antigens, Inflammation, Haemodynamic Disorders: Oedema, hyperemia, congestion, haemorrhage, circulatory disturbances, thrombosis, ischaemia & infarction.

Section-B

30 Marks

- Unit A General Knowledge – Current events, sports, history, geography, basic economics, general politics, Indian Constitution, Science environment, General awareness of Haryana etc
- Unit B Questions on Mathematics of matriculation standard- Number system, simplification, decimals, corrections, simple and compound interest, percentage, average, profit and loss, discount, mensuration, Time & work and time & distance etc.
- Unit C English, covering Grammar- Prepositions, adverbs, conjunction, direct/indirect speech, singular & plural, tenses, antonyms/synonyms etc
- Unit D Questions on Reasoning
- Unit E Questions on analytical Ability