

FORENSIC SCIENCE LABORATORIES

POLICE DEPARTMENT

Madivala, Bangalore

SYLLABUS FOR THE POST OF EEG TECHNICIAN (FORENSIC PSYCHOLOGY SECTION)

Paper I: General Paper

- General awareness, Current affairs, Qualitative & Quantitative and general basic questions about all the subjects related to Physics, Chemistry, Biology, Electronics and Computer Science.

Paper II: Subject Paper

- Definition, types and functions organization of human body, brief structure and functions of respiratory system, cardiovascular system, nervous system, endocrinal system.
- Neuroscience: Anatomy of the brain – Human brain and structures, Neurons, structure, communications, synapses, neural transmission, neurotransmitters, divisions of brain, neuro-structures - cerebellum, cerebrum, mid brain, pons, medulla oblongata, spinal cord, spinal nerves, cranial nerves, CNS and PNS- action potential.
- Brain signal processing Electroencephalogram – relationship between neuronal activity and EEG, cortical sources of the scalp EEG signals, acquisition of EEG, Artifacts of EEG, Pre-processing- Filtering, Principles component of analysis, different frequency bands of EEG, Event Related brain potentials (ERP) normal EEG, Awake EEG, Sleep EEG, Eye movements, Abnormal EEG records, EEG in neurological disorder, Standards for performing clinical EEG, EEG activation. Different parts of EEG machine and its functions, i.e. Montage, Electrodes, filter, transformers, Ac and Dc, power factor, RMS, average and maximum value of Ac, calibration, sphenoidal electrodes, depth electrodes, electroencephalographic monitoring, video electroencephalography, quantitative electroencephalography, brain mapping and others. Pharmacology and drug effects.
- Electroencephalography reporting, spectral decomposition, features identification of time frequency analysis - Fourier, wavelet, Hilbert transformation and spectral estimation, pattern classification by linear discriminants, support vector machine (SVM) and artificial neural networks (ANN) (MATLAB) coding assignments, familiarization with EEG lab. Functional Magnetic Resonance Imaging (fMRI) - hemodynamic activity of brain – T1, T2 weighted images 3D reconstruction MRI image and functional sequencing over time fMRI acquisition, Pre-processing, artifacts removal, inferencing Blood Oxygen Level Dependent (BOLD) patterns of activation, application to clinical and forensic sciences.

KSP Laboratory Assistant Syllabus - Subject Wise

ksp.gov.in Laboratory Attender General Awareness Syllabus

- National Dance
- Music & Literature
- Indian Culture
- Scientific observations
- Political Science
- World organizations
- Countries and Capitals
- Famous Places in India
- Books and Authors
- Important Dates
- About India and it's neighboring countries
- Science and innovations
- New inventions
- Economic problems in India
- Geography of India
- National and International current affairs

Karnataka State Police EEG Technician Current Affairs Syllabus

- Books & Authors
- Finance
- Science & Technology
- Environment
- Economy
- Banking
- Awards
- Sports & General
- Festivity
- International Affairs
- Current Events
- Current Ministers & Governors
- Business
- Indian Financial System
- Politics

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- Capitals & Currencies
- Education
- Government Schemes
- Abbreviations and Economic Terminologies
- Summits & Conferences, etc
- Obituary
- Talkies

KSP Laboratory Assistant Quantitative Syllabus

- Time and Work Partnership
- Ratio and Proportion
- Boats and Streams
- Simple Interest
- Time and Distance
- Problems on Trains
- Areas
- Races and Games
- Numbers and Ages
- Mixtures and Allegations
- Mensuration
- <https://www.freshersnow.com/syllabus/>
- Permutations and Combinations
- Problems on L.C.M and H.C.F
- Pipes and Cisterns
- Percentages
- Simple Equations
- Problems on Numbers
- Averages
- Indices and Surds
- Compound Interest
- Volumes
- Odd Man Out
- Quadratic Equations
- Probability
- Profit and Loss
- Simplification and Approximation

KSP Forensic Science Laboratory Physics Syllabus

- Mathematical Methods

- Classical Mechanics
- Relativity
- Atomic
- Molecular Physics
- Condensed Matter Physics
- Thermodynamics
- Statistical Mechanics
- Nuclear and Particle Physics
- Quantum Theory and its Applications
- Electromagnetic Theory
- Electronics
- Experimental Physics

ksp.gov.in Laboratory Attender Chemistry Syllabus

- General Chemistry
- Structure of Atom
- Electrochemistry
- Periodicity
- Solid State
- Solutions
- Classification of Elements
- Molecular Structure
- Chemical Bonding
- Surface Chemistry
- Redox Reactions
- Chemical Kinetics
- States of Matter
- Equilibrium
- Thermodynamics
- Processes of Isolation of Elements
- Coordination Compounds
- P, D, F Block Elements
- Hydrogen
- D Block Elements
- Alkali and Alkaline earth metals (S Block)
- Haloarenes
- Alcohols
- Haloalkanes
- Aldehydes
- Phenols

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- Ketones
- Ethers
- General Organic Chemistry
- Carboxylic Acids
- Biomolecules
- Hydrocarbons
- Environmental Chemistry
- Amines
- Chemistry in Everyday Life

Karnataka State Police EEG Technician Biology Syllabus

- Embryology of angiosperms
- Plant Physiology
- Biochemistry
- Plant growth and growth hormones
- Ecology
- Pteridophyte
- Gymnosperm
- Morphology of Angiosperm
- Anatomy
- Algae, Fungi
- Plant Diseases
- Viruses
- Bacteria
- Bryophytes
- Plant Succession
- Environmental Pollution
- Cell Biology

KSP Forensic Science Laboratory Electronics Syllabus

- Basics of Circuits and Measurement Systems
- Electrical and Electronic Measurements
- Analytical
- Control Systems
- Optical Instrumentation
- Process Control
- Signals & Systems, and Communications

KSP Laboratory Assistant Computer Science Syllabus

- Knowledge of C++
- Operating Systems – DOS
- PHP
- MS SQL Server
- Oracle PL_SQL Architecture
- ASP.NET
- ADO.NET
- Java & JavaScript
- Manageable switch/router & wireless LAN with the network security
- Firewall & anti virus
- UML
- Object-Oriented designing
- Proposing and creating architecture and re-usable libraries in.NET
- JavaScript
- Networking with LAN/WAN
- Novel
- Window OS client & server & Linux OS-client & server.
- Web Services
- Window Services
- JSON
- The query will be an added plus
- Grid Computing, Distributed
- OS
- Image processing, Digital signal processing
- Image processing
- VLSI
- Embedded System