KSPCB Syllabus 2018-2019 (http://sarkarirecruitment.com/)

KSPCB General Syllabus (http://sarkarirecruitment.com/)

General

- Global Environmental concerns
- Types of Pollution- Natural and Man made
- Effects of Pollution
- Environmental laws of India
- Global conventions for environment protection

Air pollution

- Design of Pollution Control Equipments
- Operation & Maintenance of Air Pollution Control
- Air Pollution- source and effects.
- Air Pollution controls System
- Objective & salient features of Air (Prevention & Control of Pollution)1981
- Ambient Air Quality Standards

Solid Waste

- Source, Composition and effects
- Municipal Solid Waste
- Objective and salient features of Municipal Solid Waste Management & Handling

Industrial Effluent

- Operation and Maintenance of ETP
- Effluents treatment methods
- Source and effects
- Design of Treatment Plants

Noise

- Noise Control measures
- Sources and their effects
- Ambient Noise Standards

Hazardous Waste

- Objective and Salient features of Hazardous Waste (Management & Handling 1989)

Water Pollution
Objective & salient features of water (Prevention & Control of Pollution) 1974
- Sewage Pollution-sources and effects
- Design of Sewage Treatment Plants (STP)
- Operation and Maintenance of STP
- Sewage treatment methods
- Design of UGD system/Water supply

Hospital Waste
- Treatment and disposal of Bio-medical waste
- Types of Biomedical Waste generated in Hospital.
- Objective and salient features of Bio-medical (Management&Handling)1998

KSPCB Assistant Scientific Officer Syllabus (http://sarkarirecruitment.com/)

The periodic table and Atomic properties
- The long form of periods table
- Atomic properties
- Cause of periodicity
- Cause of recurrence of properties. Division of elements into s.p.d and blocks

Oxidation & Reduction
- Sign of electrode potentials
- Oxygen overvoltage
- Single electrode potential
- Galvanic cells
- Nernst the equation
- Hydrogen overvoltage
- Oxidation number
- Electrochemical series
- Applications of electrochemical series

Acids and Bases
- Arrhenius concept
- HAS Bconcept and illustration
- Lux- Flood concept, Superacids
- Proton transfer theory
- The concept of Lowry and Bronsted

Chemical Bonding
• Types
• Ionic radius ratio rule
• Lattice energy
• Coordinate
• Hydrogen and agnostic bonds
• Ionic
• Covalent

Solvent Extraction

• Definition
• Masking and salting-out agent
• Techniques
• A sequence of the extraction process
• Factor affecting extraction oxidation state
• Modifiers
• Types
• Batch and continuous extraction
• Principal and efficiency of extraction
• Synergistic

Colourimetry and Spectrophotometry

• Photoelectric colourimeters
• Theory of Colorimetry and Spectrophotometry
• Photoelectric spectrophotometers

Electro-Chemistry

• Nernst equation
• Primary, secondary and lithium batteries
• Electrochemical energy sources- Batteries
• Classification, characteristic
• Redox system
• Arrhenius theory of strong and weak electrolytes and its limitation

Statistical Treatment of Analytical Data and Sampling

• Classification of errors
• Accuracy and precision
• A minimisation of errors
• Systematic errors, source
• Effects and their reduction
• Significant figure
• Quality control and quality assurance
• Accreditation system
• Representative sample
• Sample storage
• Sample pretreatment and sample preparation
• Hazards in sampling
• Mean, Median and standard deviation
• Sampling and handling
• Quality in analytical laboratories

Conductometry

• General considerations
• Applications of conductometric titrations
• Basics of conductometric titrations, Apparatus and measurements
• The measurement of conductivity
• The conductometric titrations