Annexure-I

Syllabus for the Post of Forest Guard

A. General Awareness (30 MCQ):

Questions are designed to test the candidate's general awareness of the environment around him and its application to society. Questions are also designed to test knowledge of current event and of such matters of everyday observation and experience in their scientific aspect as may be expected of an educated person. The test will also include questions relating to India and its neighbouring countries especially pertaining to History, Culture, Geography, Economics, General Policy and science.

B. Arithmetic & Mental Ability and Reasoning (30 MCQ)

The questions will be designed to test the ability of appropriate use of numbers and number sense of the candidate. The part will include questions on problems relating to number system, computation of whole numbers, decimals and fractions, relationships between numbers, fundamental arithmetical operations, percentage, ratio and proportion, average, interest, profit and loss, discount, use of tables and graphs, menstruation time and distance ratio and time etc.
it would include questions of both verbal and non-verbal type. The test will include questions on Semantic analogy, Symbolic operations, Symbolic/Number analogy, Trends, Figural analogy, Space orientation, Semantic classification, Venn diagrams, Symbolic/ Number classification, Drawing inferences, Figural classification, Punched hole / Pattern-folding and unfolding, Semantic series, Figural pattern-folding and Completion, number services, Embedded figures, Figural series, Critical thinking, Problem solving, Emotional intelligence, Word building, Social intelligence, Coding and decoding, other sub-topics, if any numerical operations.

C. General English (10 MCQ)

Spot the error, Fill in the blanks, Synonyms/Homonyms, Antonyms, Spellings/Detecting mis-spelt words, Idioms & phrases, One word substitution, Improvement of sentences, Active/Passive voice of verbs, Conversion into Direct/Indirect narration, Shuffling of Sentence parts, Shuffling of Sentences in a passage, Cloze Passage, Comprehension Passage.

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D. **Science of Intermediate level(30 MCQ):-**

Chemistry

Some basic concepts of Chemistry, Structure of atom, Classification of elements and Periodicity in properties, Chemical bonding and Molecular structure, States of matter: Gases and Liquids, Thermodynamics, Equilibrium, Redox reactions, Hydrogen, s-Block elements (Alkali and Alkaline earth metals), Group 13 and 14 p-Block elements, Organic chemistry-some basic principles and techniques, Hydrocarbons, Environmental Chemistry.

Solid state, Solutions, Electrochemistry, Chemical kinetics, Surface chemistry, General principles and processes of isolation of elements, Group 15,16, 17 & 18 p-Block elements, d and f Block elements, Coordination compounds, Haloalkanes and Haloarenes, Alcohols, Phenols and Ethers, Aldehydes, Ketones and Carboxylic acids, Organic compounds containing Nitrogen, Biomolecules (Carbohydrates, Proteins, Hormones, Vitamins, Nucleic acids), Polymers, Chemistry in everyday life (Chemicals in medicines, Chemicals in food, Cleansing agents).

Physics

Physical world and measurement, Kinematics, Laws of motion, Work, Energy and Power, Motion of system of particles and rigid body, Gravitation, Properties of bulk matter, Thermodynamics, Behaviour of perfect gas and Kinetic theory, Oscillations and Waves

Electrostatics, Current electricity, Magnetic effect of current & magnetism, Electromagnetic induction and alternating current, Electromagnetic waves, Optics, Dual nature of matter and radiation, Atoms & nuclei, Electronic devices, Communication systems.

Biology

Diversity in living world, Structural organisations in Animals and Plants, Cell structure and function, Plant physiology (Transport in plants, Mineral nutrition, Photosynthesis, Respiration, Plant growth and development), Human physiology (Digestion and absorption, Breathing and Respiration, Body fluids and circulation, Excretory products and their elimination, Locomotion and Movement, Neural control and coordination, Chemical coordination and regulation).

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Syllabus T.A. (Field/Lab)

General Syllabus for Entry-Level post of
Category-II Technical Assistant pay level 5 of 7th CPC Pay Matrix

To be used against *General Awareness* & Reasoning, General English & General Science and Arithmatic of framework elaborated at Para 2.2 of Appendix – XI of ICFRE TSR – 2013 for all functional Groups viz. Field/Lab Research, Maintenance, Workshop, General Service and Para Medical)

A. General Awareness & Reasoning (20 MCQ):

i) General Awareness:-
Questions in this component will be aimed at testing the candidate's general awareness of the environment around him and its application to society. Questions will also be designed to test knowledge of current events and of such matters of everyday observation and experience in their scientific aspects as may be expected from an educated person. The test will also include questions relating to India and its neighbouring countries especially pertaining to history, culture, geography, economic scene, general policy and scientific research etc. These questions will be such that they do not require a special study of any discipline.

ii) Reasoning:-
Questions of reasoning would include questions of both verbal and non-verbal type. This component will include questions of analogies, similarities and differences, spatial visualization, spatial orientation, problem solving, analysis, judgment, decision making, visual memory, discrimination, observation, relationship concepts, arithmetic reasoning, verbal and figure classification, arithmetical number series, non-verbal series, coding and decoding statement, conclusion, syllogistic reasoning etc

B. General English & General Science (20 MCQ)

i) General English:-
Questions in this component will be designed to test the candidate's understanding and knowledge of english language and will be based on spot the error, fill in the blanks, synonyms, antonyms, spelling/detecting misspelled words, idoms & phrases, One word substitution, improvement of sentences, Active/Passive Voice of Verbs, conversion into direct/indirect narration, comprehension Passage etc.

ii) General Science:-
Basic understanding of science expected of a high school student

C. Arithmetic (20 MCQ)

The questions will be designed to test the ability of appropriate use of numbers and number sense of the candidate. The part will include questions on problems relating to number system, computation of whole numbers, decimals and fractions, relationships between numbers, fundamental arithmetical operations, percentage, ratio and proportion, average, interest, profit and loss, discount, use of tables and graphs, mensuration time and distance ratio and time etc.

Syllabus T. A. (Maintenance)

General Syllabus for Entry-Level post of
Category-II Technical Assistant pay level 5 of 7th CPC Pay Matrix

To be used against General Awareness & Reasoning, General English & General Science and Arithmatic of framework elaborated at Para 2.2 of Appendix – XI of ICFRE TSR – 2013 for all functional Groups viz. Field/Lab Research, Maintenance, Workshop, General Service and Para Medical)

A. General Awareness & Reasoning (20 MCQ):

i) General Awareness:-
Questions in this component will be aimed at testing the candidate's general awareness of the environment around him and its application to society. Questions will also be designed to test knowledge of current events and of such matters of everyday observation and experience in their scientific aspects as may be expected from an educated person. The test will also include questions relating to India and its neighbouring countries especially pertaining to history, culture, geography, economic scene, general policy and scientific research etc. These questions will be such that they do not require a special study of any discipline.

ii) Reasoning:-
Questions of reasoning would include questions of both verbal and non-verbal type. This component will include questions of analogies, similarities and differences, spatial visualization, spatial orientation, problem solving, analysis, judgment, decision making, visual memory, discrimination, observation, relationship concepts, arithmetic reasoning, verbal and figure classification, arithmetical number series, non-verbal series, coding and decoding statement, conclusion, syllogistic reasoning etc.

B. General English & General Science (20 MCQ)

i) General English:-
Questions in this component will be designed to test the candidate's understanding and knowledge of english language and will be based on spot the error, fill in the blanks, synonyms, antonyms, spelling/detecting misspelled words, idoms & phrases, One word substitution, improvement of sentences, Active/Passive Voice of Verbs, conversion into direct/indirect narration, comprehension Passage etc.

ii) General Science:-
Basic understanding of science expected of a high school student

C. Arithmetic (20 MCQ)

The questions will be designed to test the ability of appropriate use of numbers and number sense of the candidate. The part will include questions on problems relating to number system, computation of whole numbers, decimals and fractions, relationships between numbers, fundamental arithmetical operations, percentage, ratio and proportion, average, interest, profit and loss, discount, use of tables and graphs, mensuration time and distance ratio and time etc.

4. **Functional Group–Maintenance–Cat.–II- Technical Assistant (Computer Science / Information Technology)**

Shall include the syllabus of Diploma level in Computer Science/Information Technology broadly comprising of Digital logic design, computer organization and architecture, computer networks, data structures using C, Database Management Systems, Object Oriented Programming with C++, Operating system, Software Engineering, Programming with Java, Web Programming, Software Testing, Network Security and Management, Information Storage and Management.

Syllabus of Forestry

SILVICULTURE

General Silvicultural Principles -Ecological and physiological factors influencing vegetation, natural and artificial regeneration of forests; methods of propagation, grafting techniques; site factors; nursery and planting techniques nursery beds, containers and maintenance, grading and hardening of seedlings; establishment and tending. Silviculture of some of the economically important species in India. Silviculture systems (Clear felling, uniform shelter wood selection, coppice and conversion systems), Management of silviculture systems of temperate, subtropical, humid tropical, dry tropical and coastal tropical forests; Thinning.

AGROFORESTRY

Agroforestry- Scope and necessity; Agro forestry systems under different agroecological zones; selection of species and role of multipurpose trees and NTFPs, techniques, food, fodder and fuel security. Social/Urban Forestry: Objectives, scope and necessity. JFM- Principles, objectives, Methodology, scope and benefits, National agroforestry policy.

FOREST SOILS AND WATERSHED MANAGEMENT

Forests Soils: Classification, factors affecting soil formation; physical, chemical and biological properties. Soil conservation-definition, causes for erosion; types-wind and water erosion; conservation and management of eroded soils/areas, wind breaks, shelter belts; sand dunes; water logged and other waste lands. Role of forests in conserving soils. Role of micro-organisms in ameliorating soils; N and C cycles. Watershed Management-Concepts of water shed; forest hydrology, landslide controls, rehabilitation of degraded areas; water harvesting and conservation;ground water recharge and watershed management.

ENVIRONMENTAL CONSERVATION AND BIODIVERSITY

Environment- Components and importance, principles of conservation, impact of deforestation; forest fires and various human activities like mining, construction and developmental projects, population growth on environment. Pollution-Types, Global warming, green house effects, ozone layer depletion, acid rain, impact and control measures, environmental monitoring; concept of sustainable development. Control and prevention of air, water and noise pollution. Environmental impact Assessment.

TREE IMPROVEMENT

General concept of tree improvement, methods and techniques, variation and its use, provenance. seed source, exotics; quantitative aspects of forest tree improvement, seed production and seed orchards, progeny tests, use of tree improvement in natural forest and stand improvement, forest genetic resources and gene conservation in situ and ex-situ, application of DNA technology in foresty.

FOREST MANAGEMENT AND MENSURATION

Objective and principles; techniques; stand structure and dynamics, sustained yield relation; rotation, normal forest, growing stock; regulation of yield; management of forest plantations, commercial forests, forest cover monitoring. Forest Divisional Working plans. Methods of measuring –diameter, girth, height and volume of trees; form-factor; volume estimation of stand, current annual increment; mean annual increment, Sampling methods and sample plots. Yield calculation; yield and stand tables, forest cover monitoring through remote sensing; Geographic information Systems for management and modeling. Forest Surveying different methods of surveying.

FOREST ECOLOGY

Biotic and abiotic components, forest eco-systems; forest community concepts; vegetation concepts, ecological succession and climax, primary productivity, nutrient cycling and water relations. Forest types in India, identification of species. composition and associations; dendrology, taxonomic classification, principles and establishment of herbaria and arboreta conservation of forest ecosystems.

FOREST RESOURCES AND UTILIZATION

Logging and extraction techniques and principles, transportation systems, storage and sale of Timber; Non-Timber Forest Products (NTFPs)- definition and scope; gums, resins. oleoresins. fibres, oil seeds nuts. rubbers, canes, bamboos, medicinal plants, charcoal, lac and shellac, katha and Bidi leaves, need and importance of wood seasoning and preservation general principles of seasoning, air and kiln seasoning, composite wood; plywood, fibre boards, particle boards, wood substitution.

FOREST PROTECTION & WILDLIFE

Injuries to forest, insect-pests and disease. General forest protection against fire, equipment and methods, controlled use of fire. Rotational and controlled grazing, different methods of control against grazing and browsing animals; effect of wild animals on forest regeneration; encroachment, poaching, shifting cultivation and control.

FOREST ECONOMICS AND LEGISLATION

Fundamental principles, cost-benefit analyses; estimation of demand and supply; Socioeconomic analysis of forest productivity and attitudes; valuation of forest goods and service. National Forest Policy, Forest laws, necessity; general principles, Indian Forest Act 1927, Forest Conservation Act, 1980, Wildlife Protection Act 1972 and their amendments.

FORESTS AND PEOPLE

Forests and its importance, forest societies, interactions with people, social and cultural factors, afforesation programmes, forest conflicts, wildlife and human conflicts, important forest movements, gender dimension, tribal economy, pastoralists, management of commons and Common Property Resources (CRPS) and open access resources, sustainable livelihood, food security, eco-tourism, land use change. Forest rights, customary rights of people, community participation, biodiversity and ethnobotany, global environmental change and land use, resettlement, poverty alleviation and forests, role of NGOs and other CBOs community based organizations.

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Syllabus for Library and Information Assistant

- Development of Libraries in India; Role of Library and Information Centres in Modern Society; Laws of Library Science
- Library Legislation in Indian States; Model Public Library Act; IPR; Cyber Laws
- Professional Associations in India; National and International Organizations
- Management of Library and Information Centres: Financial and Human Resource Management; Collection Development
- Library Classification: CC and DDC; Notation and Construction of Classification Number; Call Number
- Library Cataloguing: CCC 5th Edition; AACR Latest Edition; MARC; ISBD; CCF; ISBN and ISSN
- Indexing and Abstracting
- Circulation and Maintenance; Shelving; Stock Verification
- Information Products and Services
- Digital Library; Library Automation; Internet Based Library and Information Services