

**SCHEME AND SYLLABUS FOR THE POST OF FOREST SECTION OFFICERS**  
**IN A.P.FOREST SUBORDINATE SERVICE**

**SCHEME FOR SCREENING TEST**

Screening Test (Objective Type) - Degree Standard				
PART	Subject	No. of Questions	Duration in Minutes	Maximum Marks
A	General Studies & Mental Ability and Mathematics (SSC Standard)	75	150	75
B	General Forestry	75		75
Total				150
N.B: As per G.O.Ms. No.235, Finance (HR-1, Plg & Policy) Dept, Dt: 06/12/2016, for each wrong answer will be penalized with 1/3 <sup>rd</sup> of the marks prescribed for the question.				

**SYLLABUS FOR SCREENING TEST**

**PART – A (75 Marks)**

**GENERAL STUDIES & MENTAL ABILITY**

1. General Science – Contemporary developments in Science and Technology and their implications including matters of every day observation and experience, as may be expected of a well-educated person who has not made a special study of any scientific discipline.
2. Current events of A.P state and national importance.
3. History of India – emphasis will be on broad general understanding of the subject in its social, economic, cultural and political aspects with a focus on AP and Indian National Movement.
4. Indian Geography with a focus on AP.
5. Indian polity and Economy – including the country's political system- rural development – Planning and economic reforms in India.
6. Mental Ability – Reasoning & Inferences.
7. Sustainable Development and Environmental Protection.
8. Disaster Management:
  - a) Concepts in disaster management and vulnerability profile of India / State of A.P.
  - b) Earth quakes/Cyclones/Tsunami/Floods/Drought/causes and effects.
  - c) Manmade disasters - Prevention strategies.
  - d) Mitigation strategies and measures.

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**MATHEMATICS (SSC Standard)****1. ARITHMETICS:**

- a) Number System-Natural numbers, Integers.
- b) Rational and Real numbers.
- c) Fundamental operations, addition, subtraction, multiplication, division, square roots, Decimal fractions.
- d) Unitary method-time and distance, time and work, percentages, applications to simple and compound interest, profit and loss, ratio and proportion, variation.
- e) Elementary Number Theory – Division algorithm, Prime and composite numbers. Tests of divisibility by 2,3,4,5,9 and 11.
- f) Multiples and factors, factorisation Theorem. H.C.F. and L.C.M. Euclidean algorithm. Logarithms to base 10, laws of logarithms, use of logarithmic tables.

**2. GEOMETRY:**

- i) Lines and angles, Plane and plane figures.
- ii) Theorems on
  - a) Properties of angles at a point.
  - b) Parallel lines.
  - c) Sides and angles of a triangle.
  - d) Congruency of triangles.
  - e) Similar triangles.
  - f) Concurrence of medians and altitudes.
  - g) Properties of angles, sides and diagonals of a parallelogram, rectangle and square.
  - h) Circles and its properties including tangents and normals.
  - i) Loci.

**3. STATISTICS:**

- a) Collection and tabulation of statistical data,
- b) Graphical representation - frequency polygons, histograms, bar charts, pie charts etc.
- c) Measures of central tendency.

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## **PART – B (75 Marks)**

### **GENERAL FORESTRY**

#### **1. Plant Science:**

- a) Introduction to plant science, cell structure, and classification of plant kingdom.
- b) Principles of plant physiology with reference to plant nutrition, absorption, transactions and metabolism of nutrients.
- c) Diagnosis of nutrient deficiencies and their amelioration
- d) Photosynthesis and respiration, growth and development, auxins and hormones in plant growth.
- e) Significance of D.N.A and R.N.A in the cytology.
- f) Vegetative, asexual and sexual methods of reproduction. Pollination and fertilization, Sexual incompatibility.
- g) Principles and classification of plant propagation methods.
- h) Sexual propagation and its importance and the factors affecting germination and pre-germination treatments.
- i) Development, structure, dormancy and germination of seed.
- j) Seed production and seed collection techniques in forestry crops
- k) Plant Diseases - factors affecting infections.
- l) Chemical, biological and genetic methods of disease control. (including transgenic plants)
- m) Ecological adaptation.
- n) Types of vegetational - zones and forests of Andhra Pradesh.
- o) Deforestation, Afforestation, Wasteland reclamation.
- p) Plant Varieties: Origin, importance, export potential, varieties, climate, soil requirements, propagation and planting and after care.

#### **2. Forests & Ecology:**

- a) Definition of biodiversity.
- b) Genetic, species and ecosystem diversity.
- c) Structure and functions of an ecosystem-role of Producers, consumers and decomposers.
- d) Ecological succession, Food chains, food webs and ecological pyramids.
- e) Biogeographical classification of India and value of biodiversity.
- f) Biodiversity at global, National and local levels.
- g) Hot-spots of biodiversity.
- h) Threats to biodiversity such as habitat loss, poaching of wildlife, man-wildlife conflicts.
- i) Endangered and endemic species of India.
- j) In-situ and Ex-situ conservation of biodiversity and,
- k) Convention of Biological Diversity. (CBD)
- l) Threats and injuries to forests and the forest protection measures.
- m) Role of afforestation and forest regeneration in carbon sequestration.

#### **3. Horticulture:**

- a) Definition and different branches of horticulture.
- b) Importance of horticulture in terms of economy, production, employment generation, environmental protection and human resource development.
- c) Nutritional value of horticultural crops. Divisions of horticulture and their importance.
- d) Propagation of plants by cuttage, Types of cuttings, and the factors affecting regeneration of plants from cuttings.
- e) Propagation by layerage and the factors affecting regeneration of plants by layerage and the most common methods of layerage.
- f) Propagation by grafting, importance of graftage and the factors for successful grafting. Selection of rootstock and scion, methods of budding and grafting.
- g) Importance and scope, production of crops in greenhouse.

#### **4. Soil Science:**

- a) Basics of earth, rocks and minerals.
- b) Study of folds, joints, faults, foliation and lineation in geological formation.
- c) Use of clinometer compass in the field measurements of bed, foliation, folds joints, faults and lineations in the field.
- d) Types of soils, their field identification and classification.
- e) Forest soils and their classification, factors affecting soil formation.
- f) Physical, chemical and biological properties of soils.
- g) Soil conservation — definition and causes for erosion, types of erosion, agents of erosion.
- h) Conservation and management of eroded soils/areas.
- i) Role of wind breaks, shelter belts in arresting soil erosion, sand dunes.
- j) Reclamation of saline and alkaline soils, water logged and other waste lands.
- k) Role of forests in conserving soils.
- l) Importance of manures and fertilizers.

## 5. Management of water resources and watersheds:

### A) Water Resource Management:

- a) Surface and subsurface water resources.
- b) Predicting demand for water.
- c) Impurities of water and their significance.
- d) Physical, chemical and bacteriological analysis, water borne diseases.
- e) Standards for potable water.
- f) Pumping and gravity schemes.

### B) Watershed Management:

- a) Concepts of watershed.
- b) Role of mini-forests and forest trees in overall resource management.
- c) Forest hydrology.
- d) Watershed management and environmental functions of forests.  
Water-harvesting and Soil conservation.

## 6. General Silviculture, Agro-forestry and Social forestry and Community participation:

### A. General Silviculture:

- a) Definition and principles of General Silviculture.
- b) Ecological and physiological factors influencing vegetation, natural and artificial regeneration of forests.
- c) Economic importance of some of the forestry tree species of India such as *Acacia Sundra*, *Acacia nilotica*, *Albizia lebbeck*, *Albizia procera*, *Anthocephalus Cadamba*, *Anogeissus latifolia*, *Azadirachta indica*, *Bamboo spp*, *Butea monosperma*, *Casuarina equisetifolia*, *Dalbergia sisoo*, *Emblicaeofficinalls*, *Eucalyptus spp*, *Gmelina arborea*, *Hardwickiabinata*, *Lagerstoremia lanceolata*, *Pterocarpus marsupium*, *Pterocarpus santalinis*, *Santalum album*, *Tectona grandis*, *Terminalia tomentosa*, *Tamarindus indica*.

### B. Agro-forestry:

- a) Agro forestry, its definition, scope and necessity.
- b) Role of agroforestry in the life of people and domestic animals and in integrated land use, planning especially related to soil and water conservation.
- c) Agro forestry systems under different agro-ecological zones, selection of species and role of multipurpose trees and NTFPs, techniques, food, fodder and fuel security.

**C. Social Forestry:** The objectives, scope and necessity of social forestry including the urban forestry in Andhra Pradesh.

**D.** Aim and objectives, principles, methodology and benefits of AP community forest management.

## 7. Animal health & nutrition:

- a) Role of nutrition in animal health and production.
- b) Conservation of feeds and fodder and utilization of agro by-products.
- c) Feed supplements and additives.
- d) Nutrition deficiencies and their management.
- e) Major contagious diseases affecting cattle, buffaloes, sheep and goats.
- f) Etiology, symptoms, pathogenicity, diagnosis, treatment and control of major bacterial, viral, rickettsia and parasitic infections.
- g) Animal Feed management in Zoological parks.

## 8. Economic Zoology:

- a) Beneficial and harmful insects including insect vectors of human diseases, Industrial fish, prawn and molluscs of India, Non-poisonous and poisonous snakes of India, Venomous animals-centipede, wasp, honey bee.
- b) Basics on the diseases caused by aberrant chromosomes/genes in man.
- c) Genetic counseling.
- d) DNA as a tool for forensic investigation.

## 9. Forest Administration:

The structure and activities of the AP State Forest department:

- The genesis and objectives of Indian Forest Services.
- AP State Forest Services.
- AP State Forest Subordinate Services.

## 10. Remote Sensing and Forest Working Plan:

### Remote sensing- satellite communication:

- a) Forest cover monitoring through remote sensing.
- b) Geographic information Systems for management and modeling.
- c) Usage of wireless sets & walky-talkies for communication and their basics.

## 11. A. Environmental science:

- a) Definition, scope and importance of environmental science and the need for public awareness on it.
- b) Definition, Causes, effects and control measures of Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution & Nuclear hazards.
- c) Solid waste Management: Causes, effects and control measures of urban and industrial wastes.
- d) Environmental ethics: Issues and possible solutions, Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, Wasteland reclamation, Consumerism and waste products.

## B. Renewable and non-renewable resources:

Natural resources and the problems associated with the natural resources such as forests, water, soil, land, minerals and energy.

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