### ANDHRA PRADESH PUBLIC SERVICE COMMISSION: VIJAYAWADA

**SCHEME OF THE EXAMINATION FOR RECRUITMENT TO THE POST OF ASSISTANT CONSERVATOR OF FORESTS IN A.P. FOREST SERVICE GAZETTED SERVICES**

**WRITTEN EXAMINATION (OBJECTIVE TYPE) DEGREE STANDARD**

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Subject</th>
<th>Marks</th>
<th>Questions</th>
<th>Minutes</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>General English (50 marks) &amp; General Telugu (50 marks) (to be Qualified in English &amp; Telugu individually)</td>
<td>100 Marks (Qualifying Test)</td>
<td>100 Questions</td>
<td>100 Minutes</td>
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<td>2.</td>
<td>Paper-1 General Studies &amp; Mental Ability</td>
<td>150 Marks</td>
<td>150 Questions</td>
<td>150 Minutes</td>
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<td>3.</td>
<td>Paper-2 Mathematics (SSC standard)</td>
<td>150 Marks</td>
<td>150 Questions</td>
<td>150 Minutes</td>
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<td>4.</td>
<td>Paper-3 General Forestry - I</td>
<td>150 Marks</td>
<td>150 Questions</td>
<td>150 Minutes</td>
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<td>5.</td>
<td>Paper – 4 General Forestry - II</td>
<td>150 Marks</td>
<td>150 Questions</td>
<td>150 Minutes</td>
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<td>6.</td>
<td>Interview</td>
<td>50 Marks</td>
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<td><strong>Total</strong></td>
<td><strong>650 Marks</strong></td>
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**N.B.:**

1. Candidates are required to undergo a walking test and also a Medical Examination (conducted by a Medical Board). Both the tests shall be arranged by the Forest Department, duly taking concurrence of A.P.P.S.C. For this purpose the Commission will pick up eligible candidates in the ratio of 1:3 with reference to total number of vacancies as per General Rule 22 & 22A.

2. Computer Proficiency Test (Qualifying Test) for eligible candidates in the ratio of 1:3 with reference to total number of vacancies notified

3. Appearance at all the above tests is compulsory. Absence at any or all of the papers will render the candidature invalid.

4. 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 rd of the marks prescribed for the question.

5. The minimum qualifying Marks for selection is 40% for OCs; 35% for BCs and 30% for SCs & STs.
SYLLABUS
GENERAL ENGLISH AND TELUGU
(SSC Standard)

English       Telugu
a) Comprehension  a) Synonyms & Vocabulary
b) Usage and idiom  b) Grammar
c) Vocabulary and punctuation  c) Telugu to English meanings
d) Logical re-arrangement of sentences  d) English to Telugu meanings

PAPER-I: GENERAL STUDIES AND 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 national and international 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 Indian National Movement.

4. World Geography and Geography of India with a focus on AP.

5. Indian polity and Economy – including the country’s political system- rural development – Planning and economic reforms in India.


7. Sustainable Development and Environmental Protection

8. Disaster Management (Source : CBSE Publications)
   Concepts in disaster management and vulnerability profile of India / State of A.P.
   Earth quakes / Cyclones / Tsunami / Floods / Drought – causes and effects.
   Man made disasters - Prevention strategies.
   Mitigation strategies / Mitigation measures
1. ARITHMETIC: Number System-Natural numbers, Integers, Rational and Real numbers, Fundamental operations, addition, subtraction, multiplication, division, Square roots, Decimal fractions.  
Unitary method-time and distance, time and work, percentages, applications to simple and compound interest, profit and loss, ratio and proportion, variation.  

2. ALGEBRA: Basic Operations, simple factors, Remainder Theorem, H.C.F., L.C.M. Theory of polynomials, solutions of quadratic equations, relation between its roots and coefficients (Only real roots to be considered). Simultaneous linear equations in two unknowns – analytical and Graphical solutions. Simultaneous linear inequations in two variables and their solutions. Practical problems leading to two simultaneous linear equations or inequations in two variables or quadratic equations in one variable and their solutions. Set language and set notation, Rational expressions and conditional identities, laws of indices.

3. TRIGONOMETRY: Sine x, Cosine x, Tangent x when O° = x = 90° values of sin x, cos x and tan x, for x= O°, 30°, 45°, 60° and 90°.  
Simple trigonometric identities. Use of trigonometric tables.  
Simple cases of heights and distances.


5. MENSURATION: Areas of squares, rectangles, parallelograms, triangle and circle. Areas of figures which can be split up into these figures (Field Book). Surface area and volume of cuboids, lateral surface and volume of right circular cones and cylinders, surface area and volume of spheres.

6. STATISTICS: Collection and tabulation of statistical data, Graphical representation frequency polygons, histograms, bar charts, pie charts etc. Measures of central tendency.

2. **Plant Varieties**: Origin, importance, export potential, varieties, climate, soil requirements, propagation and planting and after care,


4. **Agriculture**: Principles of plant physiology with reference to plant nutrition, absorption, transactions and metabolism of nutrients. Diagnosis of nutrient deficiencies and their amelioration photosynthesis and respiration, growth and development, auxins and hormones in plant growth. Development of hybrids, composites and synthetic, important varieties, hybrids, composites and synthetic of major crops. Seeds and seed production techniques. Principles of economics as applied to agriculture. Farm planning and optimum resource-use efficiency and maximizing income and employment. Farm systems and their spatial distribution, their significant roles in regional economic development.
Agronomy, Agricultural Extension, Dairy Engineering, Land development machinery.

   
a) Temperature, light, humidity, rainfall and soil requirements for horticultural crops. Selection of site for establishing an orchard, orchard plan, systems of planting. Establishment of an orchard. Objectives of orchard management culture, different methods of orchard culture. Pruning and training — objectives, methods and effects.
   
   
c) Flower bud initiation and formation. Factors affecting them, environmental influences, chemical, nutritional management practices. Pollination and fruit set, problems and requirements, flower and fruit drop. Unfruitfulness.
6. Plant Propagation

a) Principles and classification of plant propagation methods.
b) Sexual propagation and its importance. Factors affecting germination and pregermination treatments.

7. Green House Production

b) Control of environmental factors influencing the growth.
c) Preparation of growing media requirement and its management at different stages of crop growth. Management of nutrients.

8. Soil Science: Types of soil, field identification and classification; Forest soils, classification, factors affecting soil formation; physical, chemical and biological properties; phase relationships, consistency limits, particle size distribution, classification of soil structure and clay mineralogy. Capillary water and structural water, effective stress and pore water pressure. Permeability, Seepage pressure, quick sand condition, compressibility and consolidation. Soil conservation — definition, causes for erosion, types — wind and water erosion; conservation and management of eroded soils/areas, wind breaks, shelter belts; sand dunes; reclamation of saline and alkaline soils, water logged and other waste lands. Role of forests in conserving soils.


10. Water Resource Management: Surface and subsurface water resources, predicting demand for water, impurities of water and their significance, physical, chemical and bacteriological analysis, water borne diseases, standards for potable water. Pumping and gravity schemes, water treatment; Storage and balancing reservoir types, location and capacity. Distribution systems.

11. Watershed Management: Concepts of watershed; role of mini-forests and forest trees in overall resource management, forest hydrology, watershed development in respect of torrent control, river channel stabilization, rehabilitation of degraded areas; hilly and mountain areas; watershed management and environmental functions of forests; water-harvesting and conservation; ground water recharge and watershed management; role of integrating forest trees, horticultural crops, field crops, grass and fodders.
12. 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, polybags and maintenance, water budgeting, grading and hardening of seedlings, special approaches, establishment and tending. Traditional and recent tropical silvicultural research and practices. Silviculture of some of the economically important species in India such as Acacia Sundra, Acacia nilotica Acacia auriculiformis, Albizia lebbeck, Albizia procera, Anthocephalus Cadamba, Anogeissus latifolia, Azadirachta indica, Bamboo spp., Butea monosperma, Cassia siamea, Casuarina equisetifolia, Dalbergia sissoo, Dipterocarpus spp., Emblica officinalis, Eucalyptus spp., Gmelina arborea, Hardwickia binata, Lagerstoremia lanceolata, Pterocarpus marsupium, Prosepis juliflora, Santalum album, Semi-carpus anacardium, Salmalia malabaricum, Tectona grandis, Terminalia tomentosa, Tamarindus indica.

13. Agro-forestry, Social Forestry, Joint Forest Management: Agroforestry: scope and necessity; role in the life of people and domestic animals and in integrated land use, planning especially related to soil and water conservation, water recharge, nutrient availability to crops, nature and eco-system preservation including ecological balances through pest-predator relationships and providing opportunities for enhancing biodiversity, medicinal and other flora and fauna. Agro forestry systems under different agro-ecological zones, selection of species and role of multipurpose trees and NTFPs, techniques, food, fodder and fuel security. Research and Extension needs. Social/Urban Forestry: objectives, scope and necessity; JFM — principles, objectives, methodology, scope, benefits and role of NGOs.

14. Farm, Agri & Forest Power Tools & Machinery: Types, Uses, maintenance and safety measures.
PAPER - IV
GENERAL FORESTRY - II

1. Ecosystems & Wildlife: Concept of an ecosystem, Structure and function of an ecosystem, Producers, consumers and decomposers, Energy flow in the ecosystem, Ecological succession, Food chains, food webs and ecological pyramids, Introduction, types, characteristic features, structure and function of the following ecosystem: Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries), Wildlife of India; endangered species of India; sanctuaries and national parks of India, Biological rhythms

2. Forest Protection And Wildlife Biology: Injuries to forest — abiotic and biotic destructive agencies, insect — pests and disease, effects of air pollution on forests and forest die back. Susceptibility of forests to damage, nature of damage, cause, prevention, protective measures and benefits due to chemical and biological control. General forest protection against fire, equipment and methods, controlled use of fire, economic and environmental costs; timber salvage operations after natural disasters. Role of afforestation and forest regeneration in absorption of CO₂. Rotational and controlled grazing, different methods of control against grazing and browsing animals; effect of wild animals on forest regeneration, human impacts; encroachment, poaching, grazing live fencing, theft, shifting cultivation and control.


5. Veterinary Science: (i) Major contagious diseases affecting cattle, buffaloes, horses, sheep and goats, pigs, poultry, rabbits and pet animals. Etiology, symptoms, pathogenicity, diagnosis, treatment and control of major bacterial, viral, rickettsial and parasitic infections. (ii) Description, symptoms, diagnosis and treatment of the following:
   a) Production diseases of milk animals, pig and poultry.
   b) Deficiency diseases of domestic livestock and birds
   c) Poisonings due to infected/contaminated foods and feeds, chemicals and drugs.

6. Economic Zoology:

   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, Diseases caused by aberrant chromosomes/genes in man; genetic counseling; DNA as a tool for forensic investigation.

8. **Sampling Theory:** Complete enumeration vs. sampling, need for sampling, basic concepts in sampling, designing large-scale sample surveys, sampling and non-sampling errors, simple random sampling, properties of a good estimator, estimation of sample size, stratified random sampling, systematic sampling cluster sampling, ratio and regression methods of estimation under simple and stratified random sampling.

9. **Forest Mensuration, Remote Sensing and Forest Working Plan:** Methods of measuring — diameter, girth, height and volume of trees; form-factor; volume estimation of stand, current annual increment; mean annual increment, Yield calculation, yield and stand tables; forest cover monitoring through remote sensing; Geographic information Systems for management and modeling; Forest planning, evaluation and monitoring tools and approaches for integrated planning; multipurpose development of forest resources and forest industries development; working plans. Annual Plant of Operations.

10. **Renewable and non-renewable resources:** Natural resources and associated problems.
   a) Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.
   b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
   c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources.
   d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity.
   e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources.
   f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.


12. **Transportation Techniques:** Highway alignment, choice of layout and capacity of highways, location survey, geometric design of highways-various elements, curves, grade separation and segregation of traffic, inter-section design, highway materials and testing subgrade and pavement components, type of pavements, road drainage.

Elements of Engineering Economics, methods of appraisal, present worth, annual cost, benefit-cost, incremental analysis. Economy of scale and size. Choosing between alternatives including levels of investments. Project profitability.