

CETSE 2023 SYLLABUS FOR ITEM No.14 [Assistant Inspector (B.Sc Forestry)]

1	SILVICULTURE:
	Fundamentals of silviculture- Definition, Scope, Role of Forests
	Locality Factors- Climate, Physiographic, edaphic and biotic factors, interaction of site factors
	Crop Morphology- Crop age, even age, uneven age crop, crop composition etc,
	Growth & Development of Trees- Forms and life of trees, Crop pattern of trees and crops, hardiness and tolerance of trees
	Classification of Forest types and their distribution- Types of Forest and their distribution in India and Nagaland, champion and Seth classification etc
2	FOREST RESOURCE ASSESSMENT/MENSURATION:
	Diameter and girth measurement- Objectives methods, instruments, basal area, formulae
	Height measurement- Objectives, definition of various height; bole height, crown height etc, methods, instruments used
	Crown Measurement- Objectives, methods and types of measurements; crown width, crown height, volume, density etc.
	Volume Measurements- Standing and felled trees, Use of various formulae, different methods of measurements, specific gravity measurements, concept and measurement of various types of volume- standard volume, small timber etc.
	Bark thickness measurement- Importance, instruments, Bark quotient, Overbark, underbark etc
	Study of tree form- Theories relating to tree taper, form factors, form quotient, taper table, formula used
	Age Determination- Ocular method, form records. Branch whorl counting, growth ring, successive measurement etc
	Growth Measurement of trees- Definition of kinds of growth- diameter, basal area, height, volume, quality, growth curves, increment percent determination by Pressler's and Schneider's formulae, stem and stump analysis, CAI, MAI
	Forest Biometry- Forest sampling, inventories, crop measurement, growth and yield estimation, application of statistics- Normal distribution, standard deviation, test of significance, correlation and regression.
3	FOREST MANAGEMENT:
	Definition; Scope; principles and objects; management of forests and its peculiarities; forest management for environment protection, soil and moisture conservation

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	Sustained yield: concept and meaning; progressive yield; sustained yield in relation to environmental management etc
	Rotation: definition; kinds; factors affecting choice of rotation; conversion period; etc
	Normal Forest: Definition and concept; normality in regular forests and irregular forests etc.
	Growing stock and its increment: General consideration; Distribution of age in classes in irregular forests, normal and actual, coppice forests, Growth estimation and reduction factors for density, quality and price increment etc.
	Yield Regulation: General definitions- Felling series, felling cycles, cutting series, yield calculation, silvicultural systems in relation to yield regulation; Method of yield regulation (Regular forests- by area, reduced area and Hufnagl's modification, volume and increment method; Irregular Forests- Methods based on growing stocks, Von Mantel's Law, Ausrtrian Method etc); Application of different method of yield regulation in forests management in India.
	Management Plan/Working Plan: Definitions, objects, scope, necessity for revision; Division of forests into various units; Maps; Working Plan Code; Working Plan Preparation
4	ADVERSE INFLUENCE ON FOREST:
	Susceptibility of forest to damage caused by various agencies; its prevention and protection measures
	Human agency: Encroachment, poaching, illicit felling etc
	Forest fire: Controlled fire for forest management; Types of Forest Fire; Control Measures; Fire Management lanning; Fire lines etc
	Natural Factors: Forest, Snow, hail, drought, water logging etc
	Forest Pest and Pathogens: Role of insects and pest in forest ecosystem; Symptoms and nature of damage; prevention and control measures; Common diseases
	mycorrhiza: Importance in forestry
	Protection of plantation and regeneration areas: Fencing, Fires, weeds and Climbers, Grazing etc
5	SOCIAL AND FARM FORESTRY
	Introduction: Definition, scope, importance and general concept, Classification of forests on basis of function and object of management; Benefits of Social Forestry

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	Community Forest: Scope and limitations, Joint Forest Management (JFM); Role of Forestry in Rural Development; Environmental pollution and recreation; Place of Forestry in forest policy of India
	Agro-Forestry: Its need and scope on agricultural lands; its role in rural economy; Agro Forestry models
	Social Forestry: Raising of trees for fodder, fuel, avenue plantation, canal bank plantation, choice of species
	Recreational Forestry and Landscaping
6	FOREST POLICY AND LAW
	National Forest Policies (NFPs): Necessity; General basis of formulation; NFP 1894, 1952 & 1988 – comparisons; Constraints in implementation; Forestry Action Plan.
	The Indian Forest Act, 1927
	The Wildlife (Protection) Act, 1972 and its amendments.
	The Forest (Conservation) Act, 1980.
	Basics of Environment (Protection) Act, 1986
7	NATURAL RESOURCE MANAGEMENT
	Geology: Types of rocks; important rock forming minerals
	Soil Science: Importance of Soil, Physical, chemical and biological properties; Soil forming processes; Soil Profile; Major soil groups; Rock, Soil-Plant relationship.
	Land use problems in India: Agrarian customs and agriculture practices; Distribution of forests in India; Soil erosion- Principles, types, agencies, kinds and forms of erosion, causes and effect of erosion; etc
	Wasteland management: Introduction, classification; Soil reclamation; Management of water logged areas; techniques adopted for development of wastelands.
	Range Management: Grassland types and their distribution in India; Ecological status of Indian grasslands; Principles of grassland management.
	Hydrology: Hydrological cycles and its importance; Rainfall and its measurement; Infiltration and percolation; Evaporation and transportation; Run-off and its calculation.
	Soil and water conservation measures: Contour trenching and cultivation-designs and layout; Bunding and terracing; structure for erosion control and their designs; Gully control; Landslide control; Wind erosion and its control; wind breaks, shelter belts, sand dune fixation.
Watershed Management : Unit of Planning; Codification of watershed- Sub, Micro, mini watershed; Agronomic practices in soil conservation; forestry practices in soil conservation; Vegetative measure to check erosion at gully head, etc.	
8	APPLICATION OF MODERN TOOLS & TECHNOLOGY :
	Aerial Survey: Aerial Photography; types and specification of photos for forestry application; scale and horizontal measurement; tilt and displacement; Stereoscopy; maps; difference of maps and aerial photographs.
	Remote Sensing: Basic principles of remote sensing; spectral reflectance, thermal infrared and other spectral band from vegetation, soil and water; Visual interpretation and Digital Image Processing (DIP) of satellite data; Application of remote sensing techniques in

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	forestry and allied subjects; future prospects of remote sensing; Global Positioning System (GPS) – its principles and uses.
	Computer application in forestry
	Geographic Information System (GIS): Basic concept of GIS, Scope and principles of GIS, Spatial and non spatial information; Application of GIS in forestry and wildlife management.

