

Ecology: Ecological factors (atmospheric, edaphic, climatic, geological & biotic factors).

Ecosystem: Structure, components of ecosystem eg. Water soluble minerals and gases, producers consumers, decomposers, Pond and forest ecosystem.

Atmospheric pollution-causes and control, Types of pollution - Detergents, chemicals automobile exhaust, Radioactive matter, Smog, sound, Pesticides.

Genetics: Mendalism, Mendals experiment and law of inheritance.

Modern Classification of plant kingdom- (according to Ostwald &Tippo) (outline).

Seeds in angiospermic plants: description of development of angiospermic plants (life history of angiospermic plants).

Fruits: Dispersal of fruits and seeds

Cell differentiation Plant Tissue: Meristematic classification of meristematic&permanent tissue and functions and classification of tissue system.

Anatomy of Root, stem and leaf: difference between dicot and Monocot stem. Secondary growth of stem and root. Anatomy of hydrophytes, Xeophytes&Mesophytes.

Important phylums:

Algae: Habitat, general characters & uses, description of ulothrix& spirogyra. Bacteria: structure - types of nutrition, reproduction and economic importance.

Fungi: structure description of Rhizopus and yeast and their economic importance, Fermentation. Broyophyta: structure and economic importance, description of funaria (Moss)

Pteridophyta: general structures of pteridophytes description of fern (Droypteris) General study of gymnosperms and life history of cycas.

Classification of angiosperm,

Description of families - identification and economic importance Cruciferae, Malvaceae, Leguminosae, compositeae, cucurbitaceae. **Soil:**

Absorption of water through root hairs osmosis, Translocation and Root pressure Nitrogen cycle.

Special modes of nutrition in plants (Autotrophic, heterotrophic, Parasites, saprophytes, Symbionts insectivorous and their ecological relation.

Photosynthesis: Chloroplast, light, chlorophyll and Carbon dioxide, Mechanism of photosynthesis formation of A.T.P. and their functions and importance of photosynthesis.

Transpiration: factors and importance, Mechanism of opening and closing of stomata.

Respiration: aerobic, anaerobic respiration, mechanism of respiration (Glycolysis, Kreb's cycle, E.T.S.)

Growth & movement: definition of growth, Region of growth & their measurements, types of movements in plants, Growth hormone.

PAPER – 3 (APTITUDE TEST FOR ARCHITECTURE& DESIGN)

Part – A: Mathematics & Aesthetic Sensitivity

MATHEMATICS

Algebra: Sets relations & functions, De-Morgan's Law, Mapping Inverse relations, Equivalence relations, Peano's axioms, Definition of rationals and integers through equivalence relation, Indices and surds, Solutions of simultaneous and quadratic equations, A.P., G.P. and H.P., Special sums i.e. $\sum n^2$ and $\sum n^3$ ($n\sum N$), Partial fraction, Binomial theorem for any index, exponential series, Logarithm and Logarithmic series. Determinants and their use in solving simultaneous linear equations, Matrices, Algebra of matrices, Inverse of a matrix, Use of matrix for solving equations.

Probability: Definition, Dependent and independent events, Numerical problem on addition and multiplication, theorem of probability.

Trigonometry: Identities, Trigonometric equations, properties of triangles, solution of triangles, heights and distances, Inverse function, Complex numbers and their properties, Cube roots of unity, De-Moivre's theorem.

Co-ordinate Geometry: Pair of straight lines, Circles, General equation of second degree, parabola, ellipse

and hyperbola, tracing of conics.

Calculus: Limits & continuity of functions, Differentiation of function of function, tangents & normal, Simple examples of Maxima & Minima, Indeterminate forms, Integration of function by parts, by substitution and by partial fraction, definite integral, application to volumes and surfaces of frustums of sphere, cone and cylinder. Differential equations of first order and of first degree.

Vectors :Algebra of vectors, scalar and vector products of two and three vectors and their applications.

Dynamics:Velocity,compositionofvelocity,relativevelocity,acceleration,compositionofaccelerations, Motion under gravity, Projectiles, Laws of motion, Principles of conservation of momentum and energy, direct impact of smoothbodies.

Statics:Compositionofcoplanar,concurrentandparallelforcesmomentsandcouplesresultantofsetof coplanarforcesandconditionofequilibrium,determinationofcentroidinsimplecases,Problemsinvolving friction.

Aesthetic sensitivity

Aesthetic sensitivity Test is aimed to evaluate a candidate for aesthetic Perception, Imagination, and Observation; Creativity and Communication; and Architectural awareness.

- Visualizing three dimensional objects from two dimensional drawings
- Visualizing different sides / surfaces of three dimensional objects.
- Identifying commonly used materials and objects based on their textural qualities.
- Analytical Reasoning
- Mental Ability
- Imaginative comprehension and expression
- Architectural awareness

Part- B: Drawing Aptitude

The Drawing Aptitude Test is aimed to evaluate a candidate for his understanding of Scale and Proportion; sense of perspective, color and; understanding of the effects of light on objects through shades and shadows

- Ability to sketch a given object proportionately and rendering the same in visually appealing manner
- Visualising and drawing the effects of light on the objects and their shadow cast on the surroundings.
- Sense of Perspective Drawing
- Combining and composing given three dimensional elements to form a building or structural form
- Creating interesting two dimensional compositions using given shapes or planer forms
- Creating visual harmony using colors in given composition
- Understanding of scale and sense of proportion

PAPER – 4 (APTITUDE TEST FOR GENERAL AWARENESS (BHMCT/BFAD/BFA/ MBA (Integrated))

(A) Reasoning & Logical Deduction:

- Geometrical designs & Identification
- Selection of related letters / words / numbers / figures
- Identification of odd thing / item out from a group
- Completion of numerical series based on the pattern / logic
- Fill in the blanks of the series based on the numerical pattern and logic of the series
- Syllogisms (logic based questions), Identification of logic & selection of correct answers based on the logic

(B) Numerical Ability & Scientific Aptitude: