1. ALGEBRA


2. MATRICES AND DETERMINANTS :

Types of matrices, operations on matrices. Determinant of a matrix, basic properties of determinants. Adjoint and inverse of a square matrix, Applications-Solution of a system of linear equations in two or three unknowns by Cramer’s rule and by Matrix Method.

3. TRIGONOMETRY :

Angles and their measures in degrees and in radians. Trigonometrical ratios. Trigonometric identities Sum and difference formulae. Multiple and Sub-multiple angles. Inverse trigonometric functions. Applications-Height and distance, properties of triangles.

4. ANALYTICAL GEOMETRY OF TWO AND THREE DIMENSIONS:

5. DIFFERENTIAL CALCULUS :


6. INTEGRAL CALCULUS AND DIFFERENTIAL EQUATIONS :

Integration as inverse of differentiation, integration by substitution and by parts, standard integrals involving algebraic expressions, trigonometric, exponential and hyperbolic functions. Evaluation of definite integrals—determination of areas of plane regions bounded by curves—applications. Definition of order and degree of a differential equation, formation of a differential equation by examples. General and particular solution of a differential equations, solution of first order and first degree differential equations of various types—examples. Application in problems of growth and decay.

7. VECTOR ALGEBRA :

Vectors in two and three dimensions, magnitude and direction of a vector. Unit and null vectors, addition of vectors, scalar multiplication of a vector, scalar product or dot product of two vectors. Vector product or cross product of two vectors. Applications—work done by a force and moment of a force and in geometrical problems.

8. STATISTICS AND PROBABILITY :


Probability : Random experiment, outcomes and associated sample space, events, mutually exclusive and exhaustive events, impossible and certain events. Union
and Intersection of events. Complementary, elementary and composite events.
Definition of probability—classical and statistical—examples. Elementary
theorems on probability—simple problems. Conditional probability, Bayes’
theorem—simple problems. Random variable as function on a sample space.
Binomial distribution, examples of random experiments giving rise to Binominal
distribution.

PAPER II - GENERAL ABILITY TEST (Maximum Marks—600)

Part ‘A’—ENGLISH (Maximum Marks—200)

The question paper in English will be designed to test the candidate’s
understanding of English and workman like use of words. The syllabus covers
various aspects like: Grammar and usage, vocabulary, comprehension and cohesion
in extended text to test the candidate’s proficiency in English.

Part ‘B’—GENERAL KNOWLEDGE (Maximum Marks—400)

The question paper on General Knowledge will broadly cover the subjects: Physics,
Chemistry, General Science, Social Studies, Geography and Current Events.

(The syllabus given below is designed to indicate the scope of these subjects
included in this paper. The topics mentioned are not to be regarded as exhaustive
and questions on topics of similar nature not specifically mentioned in the syllabus
may also be asked. Candidate’s answers are expected to show their knowledge and
intelligent understanding of the subject.)

Section ‘A’ (Physics)

Physical Properties and States of Matter, Mass, Weight, Volume, Density and
Specific Gravity, Principle of Archimedes, Pressure Barometer.

Motion of objects, Velocity and Acceleration, Newton’s Laws of Motion, Force and
Momentum, Parallelogram of Forces, Stability and Equilibrium of bodies,
Gravitation, elementary ideas of work, Power and Energy.

Effects of Heat, Measurement of Temperature and Heat, change of State and Latent
Heat, Modes of transference of Heat.

Sound waves and their properties, Simple musical instruments.
Rectilinear propagation of Light, Reflection and refraction. Spherical mirrors and Lenses, Human Eye.

Natural and Artificial Magnets, Properties of a Magnet, Earth as a Magnet.

Static and Current Electricity, conductors and Non-conductors, Ohm’s Law, Simple Electrical Circuits, Heating, Lighting and Magnetic effects of Current, Measurement of Electrical Power, Primary and Secondary Cells, Use of X-Rays.

General Principles in the working of the following:

Simple Pendulum, Simple Pulleys, Siphon, Levers, Balloon, Pumps, Hydrometer, Pressure Cooker, Thermos Flask, Gramophone, Telegraphs, Telephone, Periscope, Telescope, Microscope, Mariner’s Compass; Lightening Conductors, Safety Fuses.

Section ‘B’ (Chemistry)


Acids, bases and salts.

Carbon—different forms.

Fertilizers—Natural and Artificial.


Section ‘C’ (General Science)

Difference between the living and non-living.

Basis of Life—Cells, Protoplasms and Tissues.

Growth and Reproduction in Plants and Animals.
Elementary knowledge of Human Body and its important organs.

Common Epidemics, their causes and prevention.


The Solar System—Meteors and Comets, Eclipses.

Achievements of Eminent Scientists.

Section ‘D’ (History, Freedom Movement etc.)

A broad survey of Indian History, with emphasis on Culture and Civilisation.

Freedom Movement in India.

Elementary study of Indian Constitution and Administration.

Elementary knowledge of Five Year Plans of India.

Panchayati Raj, Co-operatives and Community Development.

Bhoodan, Sarvodaya, National Integration and Welfare State, Basic Teachings of Mahatma Gandhi.

Forces shaping the modern world; Renaissance, Exploration and Discovery; War of American Independence. French Revolution, Industrial Revolution and Russian Revolution. Impact of Science and Technology on Society. Concept of one World, United Nations, Panchsheel, Democracy, Socialism and Communism. Role of India in the present world.

Section ‘E’ (Geography)

The Earth, its shape and size. Lattitudes and Longitudes, Concept of time. International Date Line. Movements of Earth and their effects.

Origin of Earth. Rocks and their classification; Weathering— Mechanical and Chemical, Earthquakes and Volcanoes.

Ocean Currents and Tides Atmosphere and its composition; Temperature and Atmospheric Pressure, Planetary Winds, Cyclones and Anti-cyclones; Humidity; Condensation and Precipitation; Types of Climate, Major Natural regions of the World.
Regional Geography of India—Climate, Natural vegetation. Mineral and Power resources; location and distribution of agricultural and Industrial Important Sea ports and main sea, land and air routes of India. Main items of Imports and Exports of India.

Section ‘F’ (Current Events)

Knowledge of Important events that have happened in India in the recent years. Current important world events. Prominent personalities—both Indian and International including those connected with cultural activities and sports.

Intelligence and Personality Test

The SSB procedure consists of two stage Selection process - stage I and stage II. Only those candidates who clear the stage I are permitted to appear for stage II. The details are:

(a) Stage I comprises of Officer Intelligence Rating (OIR) tests are Picture Perception * Description Test (PP&DT). The candidates will be shortlisted based on combination of performance in OIR Test and PP&DT.

(b) Stage II Comprises of Interview, Group Testing Officer Tasks, Psychology Tests and the Conference. These tests are conducted over 4 days. The details of these tests are given on the website www.joinindianarmy.nic.in.

(The personality of a candidate is assessed by three different assessors viz. The Interviewing Officer (IO), Group Testing Officer (GTO) and the Psychologist. There are no separate weighage for each test.)