



# Trishul Defence Academy

## Territorial Army

### PATTERN FOR CONDUCT OF PRELIMINARY INTERVIEW BOARD (PIB) WRITTEN EXAM

Paper	Subject	Time Allotted	Numbers of Questions	Marks
In one session	Part-1 Reasoning	Two Hours	25	25
	Part-2 Elementary Mathematics		25	25
	Part-3 General Knowledge		25	25
	Part-4 English		25	25
	<b>Total</b>		<b>100</b>	<b>100</b>

- **Time:** Maximum time is 02 hrs.
- **Type of Exam:** Objective (OMR Answer Sheet will be used).
- **Language:** English and Hindi both
- **Qualifying Marks:** Minimum 40% marks in each part of each paper separately and have an overall average of 50% in each paper to qualify.
- **Penalty for Wrong Answers:** For each question for which a wrong answer has been given by the candidate one third (0.33%) marks assigned to that question will be deducted as penalty.  
**Question marked for review will be treated as unanswered.**

#### SYLLABUS

##### a) Part – 1. Reasoning.

The question paper will be designed to test the candidates ability to complete sequences making logical conclusion based on simple patter of numbers, statements, figures, letters etc as may be expected of a rational thinking person without any special study of the subject.

##### b) Part – 2. Elementary Mathematics.

- I. **Arithmetic.** Number System – natural numbers, integers, rational and real numbers. Fundamental operations – addition, subtraction, multiplication, division, square roots, decimal fraction.
- II. **Unitary Method.** Time and distance, time and work, percentages, application to simple and compound interest, profit and loss, ratio and proportion, variation.
- III. **Elementary Number Theory.** Division algorithm, prime and composite numbers. Tests of divisibility by 2, 3, 4, 5, 9 & 11. Multiples and factors, factorization theorem, HCF and LCM. Euclidean algorithm, logarithms to base 10, laws of logarithms, use of logarithmic tables.
- IV. **Algebra.** Basic operations, simple factors, remainder theorem, HCF, LCM, 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 equations in two variables and their solutions. Practical problems leading to two simultaneous liner equations or in equations 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.

- V. **Trigonometry.** Sine  $x$ , cosine  $x$ , tangent  $x$  when  $0^\circ < x < 90^\circ$ . Values of sine  $x$ , cos  $x$  and tan  $x$ , for  $x = 0^\circ, 30^\circ, 45^\circ, 60^\circ$  &  $90^\circ$ . Simple trigonometric identities. Use of trigonometric tables. Simple cases of heights and distances.
- VI. **Geometry.** Lines and angles, plane and plane figures theorems on Properties of angles at a point, Parallel lines. Sides and angles of a triangle. Congruence of triangles. Similar triangles. Concurrence of medians and altitudes. Properties of angles, sides and diagonals of a parallelogram, rectangle and square. Circle and its properties, including tangents and normal. Loci.
- VII. **Mensuration.** Areas of squares, rectangles, parallelograms, triangle and circle. Areas of figures which can bisect into the figures (field book). Surface area and volume of cuboids, lateral surface and volume of right circular area of cylinders. Surface area and volume of spheres.
- VIII. **Statistics.** Collection and tabulation of statistical data, graphical representation-frequency polygons, bar charts, pie charts, etc. Measures of central tendency.

**c) Part – 3. General Knowledge.**

General knowledge including knowledge of current events and such matters of everyday observation and experience in scientific aspects as may be expected of an educated person who has not made a special study of any scientific subject. The paper will also include questions on history of India and geography of nature which candidates should be able to answer without special study.

**d) Part – 4. English.**

The question paper will be designed to test the candidates' understanding of English and workman - like use of words. Questions in English are from synonyms, antonyms, reading comprehension, Para jumbles, errors potting, jumbled sentences, sentence correction and fill in the blanks.

**CANDIDATES TO ENSURE THEIR ELIGIBILITY FOR THE**

**EXAMINATION:** The candidates applying for the examination should ensure that they fulfill all eligibility conditions for admission to the Examination. Their admission at all the stages of the examination will be purely provisional subject to satisfying the prescribed eligibility conditions. Mere issue of Admission certificate to the candidate will not imply that his candidature has been finally cleared by the competent authority.

**QUALIFYING MARKS:** Minimum 40% marks in each part of the paper separately and overall average of 50%.

**PENALTY FOR WRONG ANSWERS:** Candidates should note that there will be penalty (Negative Marking) for wrong answers marked by a candidate in the Objective Type Question Papers.