

Plan of Written Examination

All the aspirants are informed as under with respect to the written test to be conducted for the recruitment of **Surveyor** :-

- (i) The Exam will be conducted in MCQ (Multiple Choice Questions) format. OMR sheets will be used for answering the questions.
- (ii) There will be negative marking. Each question carries 1 mark. **For every wrong answer, 1/4th mark would be deducted. The question(s) not attempted will receive no credit or discredit.**
- (iii) The test would be of 2 hours duration.
- iv) Pattern of the written competitive examination is as follows:-

Sr. No.	Topic	No. of Questions	Marks (Each Question carries 1 mark)	Type of Questions
1.	Questions from the Subject (Part A of Syllabus)	90	90	MCQs (Multiple Choice Questions)
2.	Questions from General Knowledge, English, Punjabi, Logical Reasoning and Mental ability (Part B of Syllabus)	30	30	
Total		120	120	

- v) Tentative syllabus for the written examination for the recruitment of **Surveyor** is annexed at Annexure-1 and 2.

Annexure-I

Part A-Subject Syllabus(Surveyor)

- 1. Introduction:** Importance of safety and general precautions related to the trade, List of the instrument equipment's.
 - Layout of drawing sheet, Dimensions of drawing sheet.
 - Details lay out of lettering, lines & dimensioning system.
 - Introduction of surveying, types of surveying, use, application principal.
 - Knowledge of different types of scales, determine of R.F & uses of scales.
 - Different types of projection views orthographic, sectional, isometric view.
 - Use & application of conventional signs & symbols.
- 2. Chain Survey :**Uses of Chain/tape, testing of a chain & correction. Ranging (direct&indirect),Principle of chain survey, application, Terms used in chain survey, Offset, types of offsets, limit of offset, field book, types of field book, entry offield book method of chaining in slopping ground, Field procedure of chain survey errors in chain survey, plotting procedure, Calculation of area(regular& irregular figure) Knowledge of site plan.
- 3. Compass Survey:** Basic terms used in compass survey,Instrument & it setting up, Conversion of bearing web to R.B.
Calculation of included angle from bearing local attraction, magnetic declination and true bearing, closing error. Adjustment of closing error, precaution in using prismatic compass.
- 4. Planetablesurvey:**principles, merits & demerits Instrument used in planetable survey setting up the plane table. (centering, levelling, orientation), Methods of plane table survey (radiation, intersection, section, traversing), Traversing using the odolite(closed &open), traverse computation, determination of consecutive coordinates, independent co-ordinate, checking & balancing of traverse, preparation of gales traverse table, computation of area using co-ordinates, calculation of omitted measurement.
- 5. Levelling :**Introduction to levelling, Types of levelling instruments, Technical terms used in levelling, Temporary & permanent adjustment, Different types of levelling Entry of level book(Reduced level calculation method)Curvature & refraction effect sensitivity of bubble tube. Common error and their elimination. Degree of accuracy.
- 6. Tachometry :**Introduction of tachometry & terms use advantages and disadvantages, Tachometric constants & its determination. Determination of horizontal & vertical distances by various methods.
- 7. Contouring:** contour interval selection of contour interval, characteristics of contour, uses of contour contouring by various method. Interpolation of contour by various methods, drawing of contours, computation of volume establishment of gradient by Abney level.
- 8. Curves, Purpose, Types of curves** – simple, compound, reverse, transition, vertical. Elements of simple curve, computation of elements of simple curve. Various methods for setting out simple, compound, reverse, transition & vertical curve.

9. **Modern survey instruments:** Parts of Total station, temporary adjustment of T.S, working procedure of T.S.
10. **Cadastral survey:** Cadastral map, term used in cadastral survey, preliminary knowledge for prepare a site plan. Calculation of area by digital planimeter.
11. Types of surveys for location of a road, points to be considered during reconnaissance survey, classification of roads and terms used in road engineering, alignment of roads relative importance of length of road, height of embankment depth of cutting&filling, road gradients superelevation etc.
12. Details knowledge for preparation of topographical map. Details knowledge for preparation of cadastral map. Details knowledge for preparation of a road project.
13. Introduction to AUTOCAD. Use AUTOCAD command survey software for survey drawing.
14. Importance of cartographic projection. Uses of various types of cartographic projection for mapping.
15. Introduction of GIS& GPS. Elements of GPS/DGPS. Observation principles. Sources of error & handling of error in GPS. Various type of GPS application. Concept & use of survey software.
16. Introduction to hydrographic survey, practice various methods of water depth measurement process, flow velocity measurement & determination of cross-sectional area of a river. Handling of eco sounder, current meter. Basic terms used in transmission line survey, justification criteria for constructing new line, marking process of tentative alignment, selection process of a good alignment. Process of detail survey & final location survey. Use of sag template, Various type of tower, construction of tower foundation.

Annexure-2

Part B--General Knowledge, Punjabi, English, Logical Reasoning and Mental Ability.

Sr. No.	Indicative Contents of Syllabus	Weightage (Approx.)
1	<p>General Knowledge and Current affairs of National and International importance including:</p> <ul style="list-style-type: none"> (i) Political issues, (ii) Environment issues, (iii) Current Affairs, (iv) Science and Technology, (v) Economic issues, (vi) History of India with special reference to Indian freedom struggle movement. (vii) Sports, (viii) Cinema and Literature. 	10
2	<p>Logical Reasoning & Mental Ability:</p> <p>Verbal reasoning : Coding, Decoding, Analogy, Classification, Series, Direction sense test, relations, mathematical operations, time test, odd man out problems.</p> <p>Non Verbal reasoning : Series, Analogy and Classification.</p> <p>Basic numerical skills, Percentage, Number system, LCM and HCF, Ratio and Proportion, Number series, Average, Problems based on Ages, Profit & Loss, Partnership and Mixture, Simple and Compound Interest, Work and Time, Time and Distance, Mensuration and Data Interpretation.</p>	10
3	<p>English:-</p> <p>Basic Grammar, Subject and Verb, Adjectives and Adverbs, Synonyms, Antonyms, One Word Substitution, Fill in the Blanks, Correction in Sentences, Idioms and their meanings, Spell Checks, Adjectives, Articles, Prepositions, Direct and Indirect Speech, Active and Passive Voice, Correction in Sentences, etc.</p>	5
4	<p>ਪੰਜਾਬੀ:-</p> <p>ਸੁੱਧ-ਅਸੁੱਧ, ਸ਼ਬਦ ਜੋੜ, ਅਗੇਤਰ ਅਤੇ ਪਿਛੇਤਰ, ਸਮਾਨਾਰਥਕ/ਵਿਰੋਧੀ ਸ਼ਬਦ, ਨਾਂਵ, ਪੜਨਾਂਵ ਅਤੇ ਕਿਰਿਆ ਦੀਆਂ ਕਿਸਮਾਂ ਤੇ ਸਹੀ ਵਰਤੋਂ, ਲਿੰਗ ਅਤੇ ਵਚਨ, ਪੰਜਾਬੀ ਅਖਾਣ ਅਤੇ ਮੁਹਾਵਰੇ, ਅੰਗਰੇਜੀ ਤੋਂ ਪੰਜਾਬੀ ਅਨੁਵਾਦ ਅਤੇ ਬਹੁਤੇ ਸ਼ਬਦਾਂ ਦੀ ਥਾਂ ਇੱਕ ਸ਼ਬਦ ਆਦਿ।</p>	5

	Maximum Marks	30
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Note:-a) The distribution of marks/question in each section is indicative. It may vary slightly.

b) The syllabus is broadly classified as above but may vary to some extent.