

**LAWS OF BARBADOS**

**LAND SURVEYORS ACT**

**CHAPTER 370**

**(SUBSIDIARY LEGISLATION)**

**THE LAWS OF BARBADOS**  
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**Land Surveyors**

Cap. 370.

**LAND SURVEYORS (EXAMINATION)  
RULES, 1964**L.N.  
1964/181.

Made by the Land Surveyors' Board with the approval of the Minister under section 11 (2) of the Land Surveyors Act.

Cap. 370.

1. These Rules may be cited as the Land Surveyors (Examination) Rules, 1964.

2. In these rules—

“Minister” means the Minister charged for the time being with responsibility for the subject of Surveys;

“Permanent Secretary” means the Permanent Secretary in the Ministry for the time being responsible for the subject of Surveys.

3. A candidate for a licence to act as a land surveyor must pass an examination to be held each year in the month of July or November beginning on such date as may be fixed by the Minister, and conducted by two competent persons appointed by him.

4. The Permanent Secretary shall publish in the *Official Gazette* notice of the holding of every such examination as follows—

(a) in the month of May in respect of a July examination; and

(b) in the month of September in respect of a November examination.

5. (1) A candidate must forward to the Permanent Secretary before the 15th June in respect of a July examination and before the 15th October in respect of a November examination a written application for permission to sit for the examination to be held in such year and must attach to the application the following documents—

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- (i) a certificate to the effect that the candidate has worked regularly and continuously for not less than one year with a licensed land surveyor;
- (ii) a Cambridge School Certificate or a General Certificate of Education or a certificate of such other examination of an equivalent or higher standard as may be accepted by the examiners, or a certified copy of any such certificate;
- (iii) testimonials of good character signed by not less than two well known and responsible persons.

(2) The minimum standard which will be accepted in the General Certificate of Education or in a certificate of another examination of an equivalent or higher standard is a pass in four subjects at Ordinary level, but in every case the subjects so passed shall include Elementary Mathematics and English Language or English Literature.

**6.** No candidate will be allowed to sit for the examination unless he has complied with the requirements of rule 5:

Provided that failure to comply with the provisions of subparagraphs (i) and (ii) of paragraph (1) of rule 5 shall not disqualify a candidate to sit for the examination if the candidate shall, prior to the date at which the examination is to be held in any year—

- (a) satisfy the Board that he has had practical experience for a period of not less than one year of land survey work; and
- (b) pass such examination as may be required by the Board.

**7.** Every candidate whose entry for the examination is accepted shall, prior to the date fixed for the examination, pay to the Accountant-General a fee of forty dollars and shall forward the receipt for such fee to the Permanent Secretary.

**8.** The examination shall be theoretical and practical, and the syllabus shall include the matters and subjects set out in the Schedule.

**9.** The examiners, if they so desire, may ask the candidates to answer oral questions on any of the subjects set out in the Schedule.

**10.** The time allowed to candidates to complete the examination in each subject shall be fixed by the examiners, and no candidate will be allowed longer than the time so fixed.

**11.** In order to pass the examination, every candidate must obtain at least half of the full marks in each subject and not less than two-thirds of the full marks in the aggregate of all subjects:

Provided however that the examiners may pass any candidate who has obtained the prescribed aggregate pass mark but has failed to attain the prescribed standard in some one subject, if he subsequently takes the examination in such one subject and attains the prescribed standard in that subject.

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## SCHEDULE

(Reg. 8)

### SYLLABUS FOR LAND SURVEYORS EXAMINATION

*Trigonometry:*

Calculation of heights and distances.

Identities, Solutions of Trigonometry equations.

Sine rule, Cosine rule, Tan rule and calculations thereon.

Solution of plane triangles.

The functions of the sum and difference of two angles with derived formulae.

Exponential values of sine and cosine.

Calculation of areas by Trigonometry.

*Areas and Volumes:*

Surface areas and volume of bodies of any shape.

Calculations of volumes relative to earth work.

Estimates for cost of preparing land of given contours.

(a) CHAIN SURVEYING:

Chain, Chaining, Field Problems, Chain Traversing.

Survey of a closed field, keeping and plotting notes, calculating the area.

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- (b) **COMPASS SURVEYING:**  
Surveyor's compass, variation of the needle, surveying with the compass, compass field notes, latitude and longitude ranges, balancing the compass survey of a closed field, methods of dealing with closing errors, calculating areas of a compass survey, methods of plotting compass surveys.
- (c) **THEODOLITE SURVEYING:**  
Theodolite, vernier, micrometer, theodolite field work, traversing, theodolite survey of a closed field, balancing survey, methods of dealing with closing errors, calculation of areas and problems on areas, plotting of theodolite traverses, problems of inaccessible lines, passing obstacles, supplying omissions, problems on division of land.
- (d) **BASE LINE MEASUREMENT:**  
Triangulation and adjustment of closing errors. Determination of heights by instruments.
- (e) **STADIA WORK:**  
Subtense methods and tachymetry including stadia surveying, stadia formulae, stadia rods, practical stadia work, stadia reduction table, and a general knowledge of plane tabling.
- (f) **TOPOGRAPHIC SURVEYING:**  
Topography and slope measurement, topography of limited areas, topography by theodolite and stadia, topography by plane table, contours.
- (g) **CIRCULAR AND VERTICAL CURVES:**  
Theory of circular and vertical curves, field work and methods of setting out curves, methods of dealing with obstacles in setting out field notes for curves.
- (h) **LEVELLING:**  
Determination of difference of elevation, gravity, levelling, Y level, dumpy level, levelling rods or staves, reciprocal levelling, operations of levelling, how to deal with errors in levelling, level field notes, accuracy of levelling, profiles and grade lines, cuttings and embankments, earth work volumes, trigonometrical levelling, barometric levelling and a general knowledge of different types of levels (i.e. Seiss Level, etc.).
- (i) **FIELD ASTRONOMY, ETC:**  
A knowledge of astronomy as would be required for the determination of the True Meridian, and a practical knowledge of the following methods of the determination of Azimuth:
- (i) Azimuth by altitudes (Stellar and Solar)
  - (ii) Azimuth by hour angle
  - (iii) Azimuth by circumpolar star at elongation.
- (j) **THEORY DESIGN:**  
Use and adjustment of instruments and methods of adjusting in the field.

A knowledge of and the use and adjustments of the following—

Theodolite (vernier and micrometer), surveyor's compasses, optical square, clinometer, chains and tapes, ranging rods, staves, alidade, barometer, dumpy and Y levels.

A knowledge of the use of logarithmic and traverse tables.

(k) **FIELD WORK:**

The actual surveying of an area of land of not less than twenty acres. The survey is to be a closed theodolite traverse of not less than ten angles. All features such as roads, drains, houses, fences, trees, etc. within a hundred feet of the traverse lines are to be shown in the field notes.

An ex-meridian solar observation for the determination of Azimuth of one of the traverse lines with all computations shown.

The survey to be plotted and the area obtained by rectangular coordinates. The error of closure to be shown and the precision of the survey to be at least one in twenty-five hundred. The scale of the survey plan to be one in twenty-five hundred. The field work to be done in advance of the written examination and all plans, field notes and computations submitted to the examiners on the first day of the examination together with a certificate signed by a Sworn Land Surveyor that it is the unaided work of the candidate.

The candidates will also be required to satisfy the examiners in actual instrument work.

(l) **TOPOGRAPHICAL DRAWING AND MAPPING:**

A knowledge of the use of the planimeter and pantograph is also required.

(m) **A KNOWLEDGE OF THE LAND SURVEYORS ACT, CAP. 370:**

The examiners may, if they so desire, ask the candidate to answer orally questions on any of the above mentioned subjects.

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