Serial Number **1954/39**

NEW ZEALAND

THE OPTICIANS REGULATIONS 1930, AMENDMENT NO. 7

C. W. M. NORRIE, Governor-General

ORDER IN COUNCIL

At the Government House at Wellington, this 10th day of March 1954

Present:

HIS EXCELLENCY THE GOVERNOR-GENERAL IN COUNCIL

PURSUANT to the Opticians Act 1928, His Excellency the Governor-General, acting by and with the advice and consent of the Executive Council, hereby makes the following regulations.

REGULATIONS

1. (1) These regulations may be cited as the Opticians Regulations 1930, Amendment No. 7, and shall be read together with and deemed part of the Opticians Regulations 1930* (hereinafter referred to as the principal regulations).

(2) These regulations shall come into force on the first day of January 1957.

2. The principal regulations are hereby amended by revoking regulation 4, and substituting the following heading and regulation:

"EDUCATIONAL QUALIFICATION

"4. (1) Every person presenting himself for the first time for an examination under the said Act shall satisfy the Board—

"(*a*) That he has been accredited for entrance to the University of New Zealand or has passed the Entrance Examination of that University, or that he has attained overseas a standard of general education not lower, in the opinion of the Board, than the standard evidenced by that examination; and

* *Gazette*, 26 June 1930, Vol. II, page 2024.
Amendments: *Gazette*, 22 December 1932, Vol. II, page 2769.
Gazette, 30 March 1933, Vol. I, page 558 (*revoked by Serial number 1951/66*).
Gazette, 5 December 1935, Vol. III, page 3585 (*revoked by Serial number 1951/66*).
Amendment No. 4: Statutory Regulations 1941, Serial number 1941/199, page 611.
Reprinted (with amendments incorporated): Statutory Regulations 1946, Serial number 1946/217, page 601.
Amendment No. 5: Statutory Regulations 1951, Serial number 1951/66, page 251.
Amendment No. 6: Statutory Regulations 1951, Serial number 1951/227, page 865.

"(*b*) That he has been credited by the University of New Zealand with Stage I passes in Zoology, Physics, and Chemistry as for the time being defined by the statutes of that university relating to the degree of Bachelor of Science, or that he has been credited by some other university with passes in Zoology, Physics, and Chemistry which in the opinion of the Board are of a standard not lower than such Stage I passes as aforesaid."

3. (1) The principal regulations are hereby amended by revoking the Second Schedule, and substituting the new Second Schedule set out in the Schedule hereto.

(2) The Opticians Regulations Amendment 1932,* and regulation 2 of the Opticians Regulations 1930, Amendment No. 6†, are hereby consequentially revoked.

SCHEDULE

" SECOND SCHEDULE

[Syllabus of subjects in which candidates may be examined]

FIRST YEAR OPTOMETRICAL COURSE

SECTION A

Part I—General and Theoretical Optics

LIGHT: The nature, propagation, and velocity of light, Romer's and Fizeau's methods of measuring the velocity of light. The formation of shadows. The pinhole camera. Simple photometry. Standards of light. Phenomena of light.

General Optics: The dioptre. Laws of reflection. Reflection at plane surfaces. Multiple reflection. Total reflection. Reflection at curved surfaces. Formation of images, real and virtual. Conjugate foci. Magnification. Laws of refraction. Index of refraction. Critical angle. Refraction by curved surfaces. Elementary theory of polarization. Polarization by reflection. Use and principle of pebble-tester, ordinary and axis-cut pebbles.

Glass: The optical qualities of different kinds of glass and other transparent media. Light and dense crown and flint glasses.

Prisms: Prism units and relative values. Refraction by prisms. Measurement of the angle of deviation. Measurement of the angle of a prism. Testing thin prisms. Minimum deviation of a prism. The tangent scale. The spectrum. Dispersion. Principles of colour. Resultant prisms.

Lenses: Thin spherical lenses. Focal length and dioptric power. Conjugate foci. Formation of images.

Cylindrical lenses. Sphero-cylindricals. Sphericals and cylindricals combined with prisms. Transpositions. Toric lenses.

Testing thin lenses. Effect of decentering. Effect of obliquity.

Optical centres. Equivalent points of concave, convex, double, plano, and meniscus lenses.

Spherical and chromatic aberration. Achromatic lenses.

Combination of two lenses separated. Equivalent focal length. Back focal length. Testing the focal lengths of thick lenses and combinations.

The different kinds of spectacle lenses and the material used in their manufacture.

The principle and use of the spherometer. Lens measurement and calculations.

Instruments: Elementary theory of the microscope, telescope, and projection apparatus. Field glasses. Opera glasses. Prism binoculars.

Part II—General Anatomy and Physiology

Elements: Elements of general anatomy, physiology, pathology and biochemistry.

* *Gazette*, 22 December 1932, Vol. III, page 2769.
† Statutory Regulations 1951, Serial number 1951/227, page 865.

SCHEDULE—*continued*

SECOND YEAR OPTOMETRICAL COURSE

Section B—Practical and Mechanical Optics

Subsection A—Lenses, etc.: The analysis of lenses, inspection of quality of lenses, forms of lenses, elementary theory of surfacing. Lens measure, its use and adjustment; trial lenses, scale of notation, etc. Frames and their adjustments.

Subsection B—Lens-setting: The marking-out, centering, and decentering of prismatic, spherical, and compound lenses for edging.

Subsection C—Frame fitting and Measurements: Reading, writing, and rewriting prescriptions. The taking of face measurements. The fitting of frames.

Subsection D—The Neutralizing of Lenses, etc.: The neutralizing of all kinds of lenses. The measurements of frames; material of which frames are made.

Subsection E—The bevelling and fitting of lenses to frames, fitting of rimless lenses to mountings, soldering and repairing of frames.

Section C—Theoretical Optometry

Anatomy of the Eye: The general structures of the human eye. The orbit, coats, humours, structure of lens, ciliary body and adjuncts, optic nerve, other nerves, positions and nature of extrinsic and intrinsic muscles, ocular appendages. Optic tract. Blood vessels of the eye.

Physiology and Optics of the Eye: The various ocular functions. Cardinal points, curvatures, and refractive indices of the media. Constants and dimensions of the schematic and reduced eye, angles, Alpha and Gamma. Static and dynamic refraction of the eye. Accommodation and convergence. Movements of the eyeball and muscles employed. The near and far points. The range and amplitude of accommodation and convergence.

The course of light through the media of the eye alone and modified by spherical and cylindrical lenses and prisms.

Emmetropia, hypermetropia, myopia, astigmatism, anisometropia, aphakia, presbyopia, asthenopia, strabismus, and diplopia.

The fields of vision and fixation, stereoscopy, colour vision and blindness. Colour perception theories. The methods of detecting colour blindness.

Instruments: Instruments commonly used for determining the refraction and muscular balance of the eyes. The optometer, the Scheiner and chromatic discs, Placido disc, ophthalmoscope, retinoscope, ophthalmometer, phorometer, rotary prism and other muscle-testing appliances. The perimeter.

Test Types, Charts, and Cards: Snellen and Jaeger types. Astigmatic charts.

Refractive Errors and their Correction: Normal and subnormal vision. The determination of visual acuity. The method of recording cases of refractive and accommodative errors.

The effect of drugs such as mydriatics, myotics, and cycloplegics.

The theory and methods of the determination and correction of errors of refraction and accommodation in the healthy human eye.

Tests for binocular vision. The pinhole disc. The determination of the conditions which render cases unsuitable to be dealt with by opticians, including any recent inflammatory condition due to mechanical, physical, chemical, bacterial, or parasitic causes; early glaucoma or cataract; any anomaly of the external muscles or of the pupil, the optic disc, retina, or media, which might suggest incipient or organic disease.

Muscular errors and their correction.

THIRD YEAR OPTOMETRICAL COURSE

Section D—Applied Optometry (Viva voce and Practical), (to include the clinical application of preceding sections)

Viva voce, Anatomy of the Eye, etc.: Also subjective and objective symptoms of diseases of the eye. The perimeter and diseases indicated by its use.

Identification of parts of the eye in models and charts.

Practical subjective sight-testing for errors of refraction, anomalies of accommodation, and muscular insufficiencies in living subjects.

The technique of focal and oblique illumination.

Practical use of the retinoscope on living subjects.

Practical use of the ophthalmoscope on living subjects."

T. J. SHERRARD,
Clerk of the Executive Council.

EXPLANATORY NOTE

[*This note is not part of the regulations, but is intended to indicate their general effect.*]

Regulation 2 of these regulations requires a candidate for registration as an optician, before beginning his technical training, to have higher educational qualifications than those at present required. He must have been accredited for University entrance or have passed the University entrance examination, or have attained an equivalent standard of general education overseas; and must also have passed in Stage I Zoology, Physics, and Chemistry at the University of New Zealand, or in equivalent examinations in those subjects at an overseas university. The existing regulations require only University Entrance or an equivalent standard of general education.

Regulation 3 re-enacts the existing examination syllabus with one amendment, and with new headings more in accordance with the existing practice. The amendment divides Section A, the first year course, into two parts, the new Part II (elements of general anatomy, physiology, pathology, and bio-chemistry) being in substitution for a similar prescription (elements of biology, anatomy, physiology, and pathology) in Section C of the second year course of the existing syllabus.

Issued under the authority of the Regulations Act 1936.
Date of notification in *Gazette*: 11 March 1954.
These regulations are administered in the Department of Health.