Assessment Specifications

Scholarship Physics 2024

Published in December 2023

Performance Standard: 93103

Assessment method: Examination

Assessment medium: Printed paper

Physics subject page

National secondary examinations timetable

Format of the assessment

There are 4 questions. Individual questions may cover the content of more than one achievement objective in the New Zealand Curriculum up to Level 8.

Equipment required

Candidates require an approved calculator, a ruler, and a protractor. Any approved scientific or graphing calculators may be used.

Resources or information supplied

All necessary formulae, constants, and data will be provided in a separate resource sheet that will accompany the examination papers.

Special notes

All working should be shown in calculations. Numerical answers should be rounded to an appropriate number of significant figures. Correct units must be included. Explanations and calculations are expected to be well set out and concise.

Content/context details

Questions may be asked within a variety of appropriate contexts, some of which may be unfamiliar to the candidates. Some questions may involve extended discussion, where the candidate needs to judge what is required.

Questions relating to practical work may include discussions of sources of error, reliability of data collected, and validity of conclusions drawn.

Assessment will be limited to a selection of the content given in the Level 3 physics achievement standards. In relation to P3.5 Demonstrate understanding of Modern Physics – the following content knowledge will be required:

- the Bohr model of the hydrogen atom: the photon; the quantisation of energy; discrete atomic energy levels; electron transition between energy levels; ionisation; atomic line spectra; the electron volt

- the photoelectric effect
- wave / particle duality
- qualitative description of the effects of the strong interaction and Coulombic repulsion, binding energy and mass deficit; conservation of mass-energy for nuclear reactions.

Content knowledge from curriculum Levels 6 and 7, relevant to the above standards, will be assumed.