

L1-PHYSR



NEW ZEALAND QUALIFICATIONS AUTHORITY  
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QUALIFY FOR THE FUTURE WORLD  
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## Level 1 Physics, 2019

2.00 p.m. Tuesday 19 November 2019

**RESOURCE SHEET**  
for 90937, 90938, and 90939

Refer to this sheet to answer the questions in your Question and Answer Booklets.

Check that this sheet is printed on the back.

**YOU MAY KEEP THIS SHEET AT THE END OF THE EXAMINATION.**

You may find the following formulae and data useful.

**90937 Demonstrate understanding of aspects of electricity and magnetism**

$$V = IR \quad P = IV \quad P = \frac{E}{t} \quad R_T = R_1 + R_2 + \dots$$

$$B = \frac{kI}{d} \quad k = 2.0 \times 10^{-7} \text{ T m A}^{-1}$$

**90938 Demonstrate understanding of aspects of wave behaviour**

$$v = \frac{d}{t} \quad v = f\lambda \quad f = \frac{1}{T}$$

**90939 Demonstrate understanding of aspects of heat**

$$Q = mc\Delta T \quad Q = mL \quad P = \frac{E}{t}$$

**Useful data**

Specific heat capacity of ice = 2100 J kg<sup>-1</sup> °C<sup>-1</sup>

Specific heat capacity of water = 4200 J kg<sup>-1</sup> °C<sup>-1</sup>

Latent heat of fusion of water = 330 000 J kg<sup>-1</sup>

Latent heat of vaporisation of water = 2 300 000 J kg<sup>-1</sup>