

L1-PHYSR



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

QUALIFY FOR THE FUTURE WORLD
KIA NOHO TAKATŪ KI TŌ ĀMUA AO!

Level 1 Physics 2022

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 (rounded values provided)

Specific heat capacity of ice	=	2100	J kg ⁻¹ °C ⁻¹
Specific heat capacity of water	=	4200	J kg ⁻¹ °C ⁻¹
Specific heat capacity of isopropyl alcohol	=	2604	J kg ⁻¹ °C ⁻¹
Latent heat of vaporisation of isopropyl alcohol	=	779 000	J kg ⁻¹
Latent heat of fusion of water	=	330 000	J kg ⁻¹
Latent heat of vaporisation of water	=	2 260 000	J kg ⁻¹