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L1–PHYSMR

991608

NZQA

NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

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

Ahupūngao, Kaupae 1, 2019

2.00 i te ahiahi Rātū 19 Whiringa-ā-rangi 2019

PUKAPUKA RAUEMI
mō 91170M, 91171M, 91173M

Tirohia tēnei pukapuka hei whakatutuki i ngā tūmahi o ō Pukapuka Tūmahi, Tuhinga hoki.

Tirohia mēnā e tika ana te raupapatanga o ngā whārangi 2–3 kei roto i tēnei pukapuka, ka mutu, kāore tētahi o aua whārangi i te takoto kau.

KA TAEA TĒNEI PUKAPUKA TE PUPURI HEI TE MUTUNGA O TE WHAKAMĀTAUTAU.

Tērā pea ka whai hua ēnei tikanga tātai, raraunga hoki ki a koe.

90937M Te whakaatu māramatanga ki ētahi āhuatanga o te hiko me te autō

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

$B = \frac{\mathrm{k}\, I}{d}$ $\mathrm{k} = 2.0 \times 10^{-7}\ \mathrm{T\ m\ A^{-1}}$

90938M Te whakaatu māramatanga ki ētahi āhuatanga o te ngaru

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

90939M Te whakaatu māramatanga ki ētahi āhuatanga o te wera[1]

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

Raraunga whaihua

Kītanga wera motuhake o te tio	=	2100 J kg^{-1} °C^{-1}
Kītanga wera motuhake o te wai	=	4200 J kg^{-1} °C^{-1}
Wera moe o te honokarihi wai	=	330 000 J kg^{-1}
Wera moe o te whakahaurehu wai	=	2 300 000 J kg^{-1}

[1] pōkākā

You may find the following formulae and data useful.

90937 Demonstrate understanding of aspects of electricity and magnetism

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

$B = \frac{\mathrm{k}\, I}{d}$ $\mathrm{k} = 2.0 \times 10^{-7}\ \mathrm{T\ m\ A^{-1}}$

90938 Demonstrate understanding of aspects of wave behaviour

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

90939 Demonstrate understanding of aspects of heat

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

Useful data

Specific heat capacity of ice	=	2100 J kg^{-1} °C^{-1}
Specific heat capacity of water	=	4200 J kg^{-1} °C^{-1}
Latent heat of fusion of water	=	330 000 J kg^{-1}
Latent heat of vaporisation of water	=	2 300 000 J kg^{-1}

English translation of the wording on the front cover

L1–PHYSMR

Level 1 Physics, 2019

2.00 p.m. Tuesday 19 November 2019

RESOURCE BOOKLET
for 91170, 91171, and 91173

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

Check that this booklet has pages 2–3 in the correct order and that none of these pages is blank.

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