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90944M



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NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

QUALIFY FOR THE FUTURE WORLD
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Tohua tēnei pouaka
mēnā kāore he tuhituhi
i roto i tēnei pukapuka

Pūtaiao, Kaupae 1, 2020

90944M Te whakaatu māramatanga ki ngā āhuatanga o te waikawa me te pāpāhua

9.30 i te ata
Rāmere 27 Whiringa-ā-rangi 2020
Whiwhinga: Whā

Paetae	Kaiaka	Kairangi
Te whakaatu māramatanga ki ngā āhuatanga o te waikawa me te pāpāhua.	Te whakaatu māramatanga hōhonu ki ngā āhuatanga o te waikawa me te pāpāhua.	Te whakaatu māramatanga matawhānui ki ngā āhuatanga o te waikawa me te pāpāhua.

Tirohia mēnā e rite ana te Tau Ākongā ā-Motu (NSN) kei runga i tō puka whakauru ki te tau kei runga i tēnei whārangi.

Me whakamātau koe i ngā tūmahi KATOĀ kei roto i tēnei pukapuka.

Tangohia te Pukapuka Rauemi 90944MR i waenganui o tēnei pukapuka.

Mēnā ka hiahia whārangi atu anō koe mō ō tuhinga, whakamahia ngā whārangi wātea kei muri o tēnei pukapuka, ka āta tohu ai i te tau tūmahi.

Tirohia mēnā e tika ana te raupapatanga o ngā whārangi 3–19 kei roto i tēnei pukapuka, ka mutu, kāore tētahi o aua whārangi i te takoto kau.

ME HOATU RAWA KOE I TĒNEI PUKAPUKA KI TE KAIWHAKAHAERE Ā TE MUTUNGA O TE WHAKAMĀTAUTAU.

TAPEKE

MĀ TE KAIMĀKA ANAKE

(b) Two unlabelled colourless solutions are known to be:

- sodium hydrogen carbonate, NaHCO_3
- sodium hydroxide, NaOH .

These solutions can be identified using only red litmus paper and sulfuric acid, H_2SO_4 , solution.

(i) Complete the table, describing any observations that would be made.

Unlabelled solution	Observation (if any) with red litmus paper	Observation (if any) with sulfuric acid (H_2SO_4)
sodium hydrogen carbonate, NaHCO_3		
sodium hydroxide, NaOH		

(ii) Explain each of the observations and how these allow the solutions to be identified.

There is more space for your answer to this question on page 7.

(iii) Whakaotia te whārite ā-kupu me te whārite tohu mō ngā tauhohenga ka puta.

konutai pākawa waro-rua + waikawa pungatara →

Whārite tohu taurite

konutai waihā + waikawa pungatara →

Whārite tohu taurite

(iii) Complete the word and symbol equations for the reactions that take place.

sodium hydrogen carbonate + sulfuric acid →

Balanced symbol equation

sodium hydroxide + sulfuric acid →

Balanced symbol equation

English translation of the wording on the front cover

Level 1 Science 2020

90944 Demonstrate understanding of aspects of acids and bases

9.30 a.m. Friday 27 November 2020
Credits: Four

90944M

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of aspects of acids and bases.	Demonstrate in-depth understanding of aspects of acids and bases.	Demonstrate comprehensive understanding of aspects of acids and bases.

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should attempt ALL the questions in this booklet.

Pull out Resource Booklet 90944MR from the centre of this booklet.

If you need more room for any answer, use the extra space provided at the back of this booklet and clearly number the question.

Check that this booklet has pages 3–19 in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.