

Term 2 Assessment Task 3 2006 Theory
Section A: Multiple Choice (1 mark each)

Select the alternative A, B, C or D that best answers the question. Fill in the response oval completely.

Sample: $2 + 4 =$ (A) 2 (B) 6 (C) 8 (D) 9
A ☐ B ☒ C ☐ D ☐

If you think you have made a mistake, put a cross through the incorrect answer and fill in the new answer.

A ☒ B ☒ C ☐ D ☐

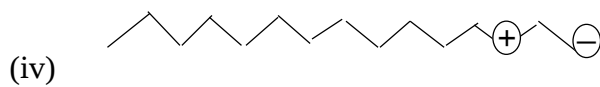
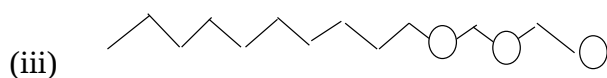
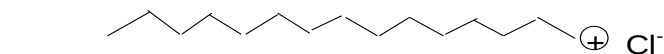
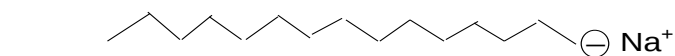
If you change your mind and have crossed out what you consider to be the correct answer, then indicate the correct answer by writing the word **correct** and drawing an arrow as follows.

A ☒ B ☒ C ☐ D ☐
correct
↑

Indicate your answer on the answer grid on page 3

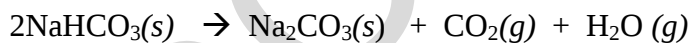
- Fatty acids containing which range of number of carbon atoms are commonly used for soap-making?
(A) from $C_6 - C_{10}$
(B) from $C_{10} - C_{20}$
(C) from $C_{20} - C_{30}$
(D) from $C_{30} - C_{40}$
- The production of sulfuric acid requires the oxidation of sulfur. What is the change in oxidation number of sulfur in sulfur dioxide compared to that in sulfuric acid?
(A) 2 to 4
(B) 4 to 6
(C) 2 to 6
(D) 4 to 8

3. Identify the diagrammatic representation of the shapes and electrical charges of corresponding surfactant molecules



	<i>Anionic</i>	<i>Cationic</i>	<i>Non-ionic</i>
(A)	(i)	(ii)	(iii)
(B)	(ii)	(i)	(iii)
(C)	(iv)	(ii)	(iii)
(D)	(v)	(i)	(iii)

4. 1.0 kg. of sodium hydrogen carbonate was heated and a complete reaction occurred



What volume of carbon dioxide gas would be produced at 100 kPa and 25°C?

- (A) 11.9 L
 (B) 147.5 L
 (C) 295 L
 (D) 590.2 L

Section A

Student Number.....

Multiple Choice Answer Grid

- | | | | | |
|----|-----|-----|-----|-----|
| 1. | A O | B O | C O | D O |
| 2. | A O | B O | C O | D O |
| 3. | A O | B O | C O | D O |
| 4. | A O | B O | C O | D O |

Section B: Short Answer Questions**Question 5 (6 marks)****MARKS**

Sulfuric acid is often described as the world's most important industrial chemical because of the great variety and importance of the uses to which it is put.

- (a) Identify one important substance which requires sulfuric acid for its production.

1

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- (b) Using equations, only, outline the three main steps in the contact process.

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Question 5 continues next page..

- (c) Describe the result for a dehydration experiment using concentrated sulfuric acid and the safe work practices that were employed.

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Question 6 (4 marks)

The Solvay process has been in use since the 1860's.

- (a) What is the Solvay process used to manufacture?

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- (b) Identify one use for this substance?

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- (c) During the Solvay process ammonia is used and converted to ammonium chloride.

- (i) Name the substance that is mixed with ammonium chloride in order to recover the ammonia?

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- (ii) Write a balanced chemical equation to show the recovery of ammonia.

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Question 7 (6 marks)

Two of the three electrolysis methods used to produce sodium hydroxide are the *diaphragm process* and the *mercury process*. Distinguish between the two processes by describing the reactions involved and comparing the purity of the product(s) in each process.

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Question 8 (4 marks)

Imagine you are an organic chemist and you are to design a new laundry detergent for washing oily and soiled clothes . Describe the structure of the detergent molecule you will synthesise and explain how it works.

4

END of TEST