

CHEMISTRY

CHM415115

Part **1**

Pages	16
Questions	5
Information Sheet	1

Reading time: 15 minutes – you may begin writing during this time

Suggested working time: 45 minutes

Instructions

- Attempt **all** questions and **all** parts within each question.
- Write your answers in the spaces provided in this exam paper.
 - Spare diagrams have been provided at the end of the exam booklet.
 - Indicate in the box provided if you have used the spare diagrams.
- A TASC approved scientific calculator can be used throughout the exam.
 - Show your workings in answers to numerical questions. No marks can be given for incorrect answers unless they are accompanied by details of the working.
 - The appropriate units must be included.
- All answers must be written in **English**.
- You **must** make sure your answers address:
 - Criterion 5 identify and apply fundamental principles and theories of electrochemistry.

Marker use	
C5	40

Additional Instructions

- Note: When you are asked to “**show that**”:
 - You should calculate your own answer to the appropriate number of significant figures and then use this value to answer the following part(s) of the question.
 - If you are unable to determine the required value, you should use the value given by the examiner in the following parts of the question.

Guide to Exam Structure

		Questions available	How many questions to answer	Suggested working time	Marks available
Part	1	5	5	45 minutes	40
Part	2	5	5	45 minutes	40
Part	3	7	7	45 minutes	40
Part	4	7	7	45 minutes	40
Total		24	24	180 minutes (3 hours)	160

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Part **2**

Pages	12
Questions	5
Information Sheet	1

Suggested working time: 45 minutes

Instructions

- Attempt **all** questions and **all** parts within each question.
- Write your answers in the spaces provided in this exam paper.
 - Spare diagrams have been provided at the end of the exam booklet.
 - Indicate in the box provided if you have used the spare diagrams.
- A TASC approved scientific calculator can be used throughout the exam.
 - Show your workings in answers to numerical questions. No marks can be given for incorrect answers unless they are accompanied by details of the working.
 - The appropriate units must be included.
- All answers must be written in **English**.
- You **must** make sure your answers address:
 - Criterion 6 identify and apply fundamental principles and theories of thermochemistry, kinetics and equilibrium.

Marker use	
C6	40

Additional Instructions

- Note: When you are asked to “**show that**”:
 - You should calculate your own answer to the appropriate number of significant figures and then use this value to answer the following part(s) of the question.
 - If you are unable to determine the required value, you should use the value given by the examiner in the following parts of the question.

Guide to Exam Structure

	Questions available	How many questions to answer	Suggested working time	Marks available
Part 1	5	5	45 minutes	40
Part 2	5	5	45 minutes	40
Part 3	7	7	45 minutes	40
Part 4	7	7	45 minutes	40
Total	24	24	180 minutes (3 hours)	160

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Part **3**

Pages	16
Questions	7
Information Sheet	1

Suggested working time: 45 minutes

Instructions

- Attempt **all** questions and **all** parts within each question.
- Write your answers in the spaces provided in this exam paper.
 - Spare diagrams have been provided at the end of the exam booklet.
 - Indicate in the box provided if you have used the spare diagrams.
- A TASC approved scientific calculator can be used throughout the exam.
 - Show your workings in answers to numerical questions. No marks can be given for incorrect answers unless they are accompanied by details of the working.
 - The appropriate units must be included.
- All answers must be written in **English**.
- You **must** make sure your answers address:
 - Criterion 7 demonstrate knowledge and understanding of properties and reactions of organic and inorganic matter.

Marker use	
C7	40

Additional Instructions

- Note: When you are asked to “**show that**”:
 - You should calculate your own answer to the appropriate number of significant figures and then use this value to answer the following part(s) of the question.
 - If you are unable to determine the required value, you should use the value given by the examiner in the following parts of the question.

Guide to Exam Structure

		Questions available	How many questions to answer	Suggested working time	Marks available
Part 1		5	5	45 minutes	40
Part 2		5	5	45 minutes	40
Part 3		7	7	45 minutes	40
Part 4		7	7	45 minutes	40
Total		24	24	180 minutes (3 hours)	160

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Part **4**

Pages	16
Questions	7
Information Sheet	1

Suggested working time: 45 minutes

Instructions

- Attempt **all** questions and **all** parts within each question.
- Write your answers in the spaces provided in this exam paper.
 - Spare diagrams have been provided at the end of the exam booklet.
 - Indicate in the box provided if you have used the spare diagrams.
- A TASC approved scientific calculator can be used throughout the exam.
 - Show your workings in answers to numerical questions. No marks can be given for incorrect answers unless they are accompanied by details of the working.
 - The appropriate units must be included.
- All answers must be written in **English**.
- You **must** make sure your answers address:
 - Criterion 8 apply logical processes to solve quantitative chemical problems.

Marker use	
C8	40

Additional Instructions

- Note: When you are asked to “**show that**”:
 - You should calculate your own answer to the appropriate number of significant figures and then use this value to answer the following part(s) of the question.
 - If you are unable to determine the required value, you should use the value given by the examiner in the following parts of the question.

Guide to Exam Structure

		Questions available	How many questions to answer	Suggested working time	Marks available
Part 1		5	5	45 minutes	40
Part 2		5	5	45 minutes	40
Part 3		7	7	45 minutes	40
Part 4		7	7	45 minutes	40
Total		24	24	180 minutes (3 hours)	160