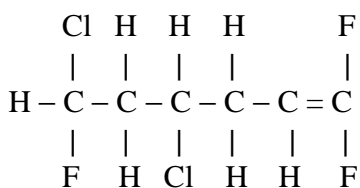


**Section A: Multiple Choice** (Nos. 1-4, 1-mark each)

*Use the multiple choice answer sheet* in the ANSWER BOOKLET

1. A suitable catalyst for the synthesis of ammonia is:
- (A) platinum
  - (B) iron
  - (C) concentrated  $\text{H}_2\text{SO}_4$
  - (D) nitric acid
2. A dry precipitate of  $\text{Mg}(\text{NH}_4)\text{PO}_4 \cdot 6\text{H}_2\text{O}$  was obtained and weighed. It was found to weigh 6.47 g. How much of this precipitate is phosphorus?
- (A) 0.82 g
  - (B) 1.46 g
  - (C) 0.03 g
  - (D) 1.64 g
3. Damage to the Earth's stratospheric ozone has mainly been due to a certain group of compounds. Which of the compounds given below is an example of this group of compounds?
- (A)  $\text{CClF}_3$
  - (B)  $\text{CCl}_2\text{FH}$
  - (C)  $\text{CF}_2\text{I}_2$
  - (D)  $\text{CF}_3\text{H}$
4. Which of the following **IUPAC** names is correct for the compound given below?



- (A) 1,1,6-trifluoro-4,6-dichlorohexane
- (B) 4,6-dichloro-1,1,6-trifluoro-2-hexene
- (C) 1,1,6-trifluoro-4,6-dichlorohexene
- (D) 4,6-dichloro-1,1,6-trifluoro-1-hexene

## Answer Booklet for Sections A and B

### INSTRUCTIONS

**Student No.....**





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* (arrow pointing to B)

## Section A

## Multiple Choice Answer Sheet

- |    |     |     |     |     |
|----|-----|-----|-----|-----|
| 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.** Answer the questions in the spaces provided. Show all relevant working in questions involving calculations

**MARKS**

**5.** Describe a chemical test and the result to identify

(a) copper ions ..... **1**

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(b) lead ions ..... **1**

.....

(c) calcium ions ..... **1**

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**6.** A student investigated the sulfate content of a fertiliser. Firstly, he dissolved 3.2 g of fertiliser in distilled water. Then, he added barium chloride solution until no further precipitate formed. He, then filtered, washed, dried and weighed the precipitate.

(a) Write a net ionic equation for the formation of the precipitate. **1**

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(b) If the student recovered 5.6 g of barium sulfate. What percentage of this fertiliser is sulfate ions? **2**

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(c) If the student assumed the original fertiliser consists of ammonium sulfate only, what is the percentage of nitrogen in the fertiliser? **2**

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Student No. ....

MARKS

7. (a) List three different chemical occupations 1

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(b) (i) Choose one of these occupations and outline the role of the chemist. 1

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(ii) Explain a chemical principle used by this chemist. 1

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8. Identify the origins of minerals in oceans. 2

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| <b>9. (a) Use equations to show the destruction of ozone in the stratosphere by a CFC.</b> | <b>MARKS</b><br><b>3</b> |
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| <b>(b) Explain the importance of the ozone layer to life on Earth.</b> | <b>1</b> |
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| <b>10. Describe two methods which you would use, including details of the preparation which you would do to determine the dissolved solids content of a sample of river water.</b> | <b>3</b> |
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Student No. ....

MARKS

11. (a) Draw the Lewis electron dot structures for the oxygen molecule and the oxygen free radical. 1

oxygen molecule	oxygen free radical
<div></div>	<div></div>

- (b) On the basis of molecular structure and bonding, explain the difference in:

- (i) chemical reactivity of ozone and oxygen ( $O_2$ ) 1

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- (ii) one physical property of ozone and oxygen ( $O_2$ ) 1

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A    **END OF TEST**