



# Cambridge IGCSE™

**CHEMISTRY**

**0620/11**

Paper 1 Multiple Choice (Core)

**October/November 2020**

**45 minutes**

You must answer on the multiple choice answer sheet.

You will need: Multiple choice answer sheet  
Soft clean eraser  
Soft pencil (type B or HB is recommended)

## INSTRUCTIONS

- There are **forty** questions on this paper. Answer **all** questions.
- For each question there are four possible answers **A, B, C** and **D**. Choose the **one** you consider correct and record your choice in soft pencil on the multiple choice answer sheet.
- Follow the instructions on the multiple choice answer sheet.
- Write in soft pencil.
- Write your name, centre number and candidate number on the multiple choice answer sheet in the spaces provided unless this has been done for you.
- Do **not** use correction fluid.
- Do **not** write on any bar codes.
- You may use a calculator.

## INFORMATION

- The total mark for this paper is 40.
- Each correct answer will score one mark. A mark will not be deducted for a wrong answer.
- Any rough working should be done on this question paper.
- The Periodic Table is printed in the question paper.

This document has **16** pages. Blank pages are indicated.



- 1 'The movement of a substance **very slowly** from an area of high concentration to an area of low concentration.'

Which process is being described?

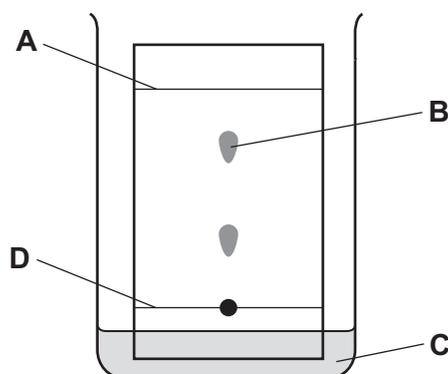
- A a liquid being frozen  
 B a solid melting  
 C a substance diffusing through a liquid  
 D a substance diffusing through the air
- 2 What happens to the average speed of gas particles when pressure and temperature are increased?

|          | average speed of particles |                       |
|----------|----------------------------|-----------------------|
|          | pressure increases         | temperature increases |
| <b>A</b> | faster                     | faster                |
| <b>B</b> | unchanged                  | slower                |
| <b>C</b> | slower                     | faster                |
| <b>D</b> | unchanged                  | faster                |

- 3 Which piece of apparatus can only measure a single fixed volume?

- A 250 cm<sup>3</sup> beaker  
 B 50 cm<sup>3</sup> burette  
 C 100 cm<sup>3</sup> measuring cylinder  
 D 25 cm<sup>3</sup> pipette

- 4 In the chromatography experiment shown, which label represents the solvent front?



5 Which substances can be separated by filtration?

- A insoluble liquid and water
- B insoluble solid and water
- C solution of soluble liquid in water
- D solution of soluble solid in water

6 An atom of element R contains 15 protons, 16 neutrons and 15 electrons.

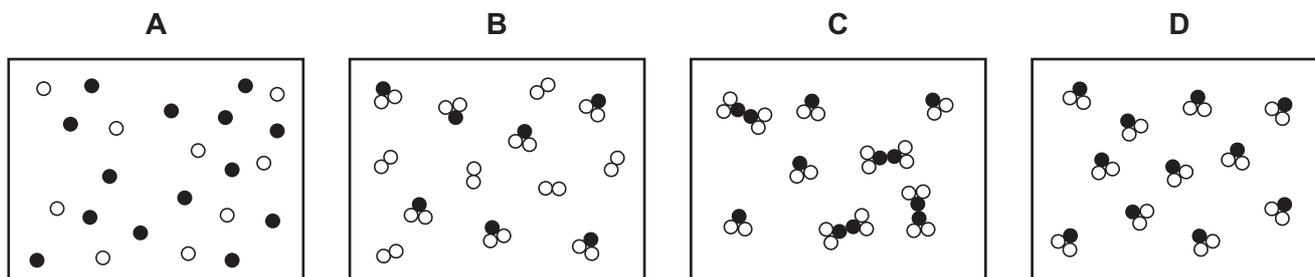
What is R?

- A gallium
- B phosphorus
- C sulfur
- D zinc

7 Which row describes the properties of potassium iodide, KI?

|   | type of bonding | boiling point | solid conducts electricity | aqueous solution conducts electricity |
|---|-----------------|---------------|----------------------------|---------------------------------------|
| A | covalent        | low           | no                         | no                                    |
| B | covalent        | high          | no                         | yes                                   |
| C | ionic           | high          | yes                        | yes                                   |
| D | ionic           | high          | no                         | yes                                   |

8 Which diagram represents a mixture of compounds?



- 9 Rubidium is in Group I of the Periodic Table and bromine is in Group VII.

Rubidium reacts with bromine to form an ionic compound.

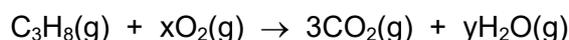
Which row shows the electron change taking place for rubidium and the correct formula of the rubidium ion?

|          | electron change | formula of ion formed |
|----------|-----------------|-----------------------|
| <b>A</b> | electron gained | Rb <sup>+</sup>       |
| <b>B</b> | electron gained | Rb <sup>-</sup>       |
| <b>C</b> | electron lost   | Rb <sup>+</sup>       |
| <b>D</b> | electron lost   | Rb <sup>-</sup>       |

- 10 Which statement explains why graphite is used as a lubricant?

- A** All bonds between the atoms are weak.
- B** It conducts electricity.
- C** It has a low melting point.
- D** Layers in the structure can slide over each other.

- 11 The equation for burning propane in air is shown.



Which values of x and y balance the equation?

|          | x  | y |
|----------|----|---|
| <b>A</b> | 3  | 4 |
| <b>B</b> | 4  | 8 |
| <b>C</b> | 5  | 4 |
| <b>D</b> | 10 | 8 |

- 12 The relative atomic mass of chlorine is 35.5.

When calculating relative atomic mass, which particle is the mass of a chlorine atom compared to?

- A** a neutron
- B** a proton
- C** an atom of carbon-12
- D** an atom of hydrogen-1

13 Concentrated aqueous sodium chloride is electrolysed using platinum electrodes.

What is the major product formed at each electrode?

|          | anode    | cathode  |
|----------|----------|----------|
| <b>A</b> | chlorine | hydrogen |
| <b>B</b> | chlorine | sodium   |
| <b>C</b> | oxygen   | hydrogen |
| <b>D</b> | oxygen   | sodium   |

14 Three substances are listed.

- 1 copper
- 2 dilute sulfuric acid
- 3 solid lead(II) bromide

Which substances conduct electricity?

- A** 1, 2 and 3      **B** 1 and 2 only      **C** 1 and 3 only      **D** 2 and 3 only

15 Sodium nitrate is added to water in a beaker and stirred until it dissolves.

At the end of the experiment, the beaker feels cold.

Which row describes the reaction?

|          | temperature of solution | type of reaction |
|----------|-------------------------|------------------|
| <b>A</b> | decreases               | endothermic      |
| <b>B</b> | decreases               | exothermic       |
| <b>C</b> | increases               | endothermic      |
| <b>D</b> | increases               | exothermic       |

16 Which substance does **not** require oxygen in order to produce energy?

- A** coal  
**B** hydrogen  
**C** natural gas  
**D**  $^{235}\text{U}$

17 Which process involves a physical change?

- A heating calcium carbonate
- B burning wood
- C melting an ice cube
- D mixing an acid and a base

18 A sign displayed in a flour mill is shown.

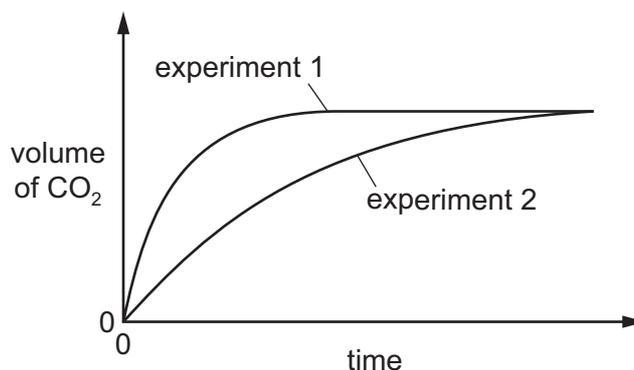


Which statement explains why there is a danger of explosion in a flour mill?

- A Flour burns very quickly because it is a fine powder.
- B Flour is a catalyst for combustion.
- C Flour mills get hot and speed up the rate of combustion.
- D The combustion of flour is exothermic.

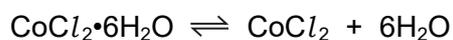
- 19 The graph shows the results of two experiments investigating the rate of reaction between excess calcium carbonate and dilute hydrochloric acid.

In each experiment the volume of carbon dioxide produced is measured at fixed time intervals.



Which statement describes the difference in conditions between experiments 1 and 2?

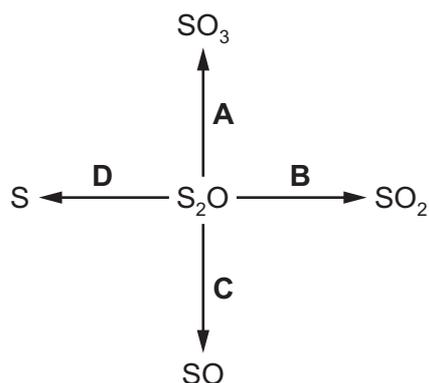
- A** In experiment 2 a higher concentration of dilute hydrochloric acid is used.
- B** In experiment 2 a higher temperature is used.
- C** In experiment 2 the mass of calcium carbonate is greater.
- D** In experiment 2 the particle size of calcium carbonate is greater.
- 20 When pink crystals of cobalt(II) chloride are heated, steam is given off and the colour of the solid changes to blue.



What happens when water is added to the blue solid?

|          | colour          | temperature |
|----------|-----------------|-------------|
| <b>A</b> | changes to pink | decreases   |
| <b>B</b> | changes to pink | increases   |
| <b>C</b> | remains blue    | decreases   |
| <b>D</b> | remains blue    | increases   |

21 In which change is the sulfur, S, in sulfur(I) oxide,  $S_2O$ , reduced?



22 What is a characteristic of acids?

- A** Acids turn methyl orange indicator yellow.
- B** Acids have a high pH value.
- C** Acids react with ammonium salts to give ammonia gas.
- D** Acids react with carbonates to produce salts.

23 Four different groups of oxides are shown.

1 MgO FeO CuO

2 CaO  $SO_2$   $TiO_2$

3 PbO CaO  $Cl_2O$

4  $NO_2$   $Br_2O$   $P_2O_5$

Which statement about these oxides is correct?

- A** 1, 2 and 3 contain basic oxides only.
- B** 2, 3 and 4 contain basic oxides only.
- C** 1 contains basic oxides only and 4 contains acidic oxides only.
- D** 1 contains acidic oxides only and 4 contains basic oxides only.



**27** A flammable gas needs to be removed from a tank at an industrial plant.

For safety reasons, an inert gas is used.

Which gas is suitable?

- A** argon
- B** hydrogen
- C** methane
- D** oxygen

**28** A substance, X, has the following properties.

- 1 It has a high melting point.
- 2 It conducts electricity in the solid and liquid states.
- 3 It is malleable.
- 4 It has a high density.

What is X?

- A** a ceramic
- B** copper
- C** graphite
- D** sodium chloride

29 A reactivity series is shown.

sodium  
calcium  
magnesium  
carbon  
zinc  
iron  
hydrogen  
copper

Which statement is correct?

- A All the metals above carbon are extracted by electrolysis.
- B Iron can only be extracted by electrolysis.
- C Calcium can be extracted by heating calcium oxide with carbon.
- D Copper can only be extracted by passing hydrogen over heated copper(II) oxide.

30 What is the symbol of the metal used in the manufacture of aircraft because of its strength and low density?

- A Al                      B Cu                      C Fe                      D Zn

31 Oxides of nitrogen are given out from car exhausts.

Which row best shows why oxides of nitrogen are unwanted in the atmosphere?

|          | acidic | toxic |
|----------|--------|-------|
| <b>A</b> | no     | no    |
| <b>B</b> | no     | yes   |
| <b>C</b> | yes    | no    |
| <b>D</b> | yes    | yes   |

32 Two reactions, M and N, both form carbon dioxide.



Which types of reaction are M and N?

|          | M                     | N                     |
|----------|-----------------------|-----------------------|
| <b>A</b> | thermal decomposition | thermal decomposition |
| <b>B</b> | thermal decomposition | combustion            |
| <b>C</b> | combustion            | thermal decomposition |
| <b>D</b> | combustion            | combustion            |

33 Which row describes two uses of sulfur dioxide?

|          | use 1                         | use 2                                |
|----------|-------------------------------|--------------------------------------|
| <b>A</b> | bleaching paper pulp          | neutralising acidic industrial waste |
| <b>B</b> | bleaching paper pulp          | preserving food and drink            |
| <b>C</b> | extracting iron from hematite | neutralising acidic industrial waste |
| <b>D</b> | extracting iron from hematite | preserving food and drink            |

34 Which statement about lime and limestone is correct?

- A** Calcium oxide is formed from limestone in a displacement reaction.
- B** Lime is used to treat alkaline soils.
- C** Limestone is a waste material in the manufacture of iron.
- D** Slaked lime is used in the process of flue gas desulfurisation.

35 Which compound has a chemical name ending in *-oic acid*?

- A**  $\text{C}_2\text{H}_5\text{OH}$
- B**  $\text{C}_2\text{H}_6$
- C**  $\text{CH}_3\text{COOH}$
- D**  $\text{C}_2\text{H}_4$

36 Petroleum is separated into fractions by fractional distillation.

Separation occurs in a fractionating column.

Some properties of three of these fractions are shown.

| fraction | boiling point range / °C | number of carbon atoms in the molecules |
|----------|--------------------------|---|
| 1        |                          | 5–10                                    |
| 2        | 320–350                  | 16–24                                   |
| 3        | 120–210                  |   |

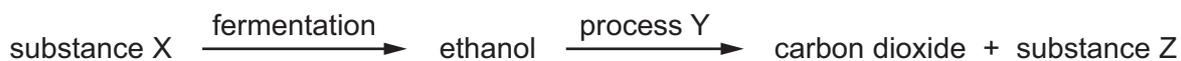
Which statement is correct?

- A Fraction 1 has a higher boiling point range than fraction 2.
- B Fraction 2 is removed from a higher point in the fractionating column than fraction 1.
- C Molecules in fraction 3 have shorter chains than those in fraction 2.
- D None of the fractions are liquid at room temperature.

37 Which statement about alkenes is correct?

- A Alkenes are saturated hydrocarbons.
- B Alkenes can be made by cracking other hydrocarbon compounds.
- C Alkenes change bromine water from colourless to brown.
- D Alkene molecules contain double bonds between carbon atoms and hydrogen atoms.

38 The flow chart shows the preparation of ethanol and some important chemistry of ethanol.



What are X, Y and Z?

|   | X       | Y              | Z       |
|---|---------|----------------|---------|
| A | yeast   | combustion     | oxygen  |
| B | glucose | combustion     | steam   |
| C | glucose | polymerisation | water   |
| D | yeast   | fermentation   | glucose |

39 Which statements about aqueous ethanoic acid are correct?

- 1 It is an alkane.
- 2 It reacts with sodium carbonate to form carbon dioxide.
- 3 It changes the colour of litmus solution from blue to red.
- 4 It is a hydrocarbon.

**A** 1 and 2      **B** 1 and 4      **C** 2 and 3      **D** 3 and 4

40 Which substance is a polymer?

- A** diamond
- B** graphite
- C** nylon
- D** sodium chloride

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## The Periodic Table of Elements

| Group                      |                             |   |                                 |                             |                              |                             |                              |                              |                                |                               |                               |                             |                               |                             |                               |                               |                            |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |   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|                              |                              |                              |                              |
| 3<br>Li<br>lithium<br>7    | 4<br>Be<br>beryllium<br>9   | 1<br>H<br>hydrogen<br>1   | 5<br>B<br>boron<br>11           | 6<br>C<br>carbon<br>12      | 7<br>N<br>nitrogen<br>14     | 8<br>O<br>oxygen<br>16      | 9<br>F<br>fluorine<br>19     | 10<br>Ne<br>neon<br>20       |                                |                               |                               |                             |                               |                             |                               |                               |                            |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |          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| 11<br>Na<br>sodium<br>23   | 12<br>Mg<br>magnesium<br>24 | Key<br>atomic number<br>atomic symbol<br>name<br>relative atomic mass |                                 | 13<br>Al<br>aluminium<br>27 | 14<br>Si<br>silicon<br>28    | 15<br>P<br>phosphorus<br>31 | 16<br>S<br>sulfur<br>32      | 17<br>Cl<br>chlorine<br>35.5 | 18<br>Ar<br>argon<br>40        |                               |                               |                             |                               |                             |                               |                               |                            |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                            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| 19<br>K<br>potassium<br>39 | 20<br>Ca<br>calcium<br>40   | 21<br>Sc<br>scandium<br>45  | 22<br>Ti<br>titanium<br>48      | 23<br>V<br>vanadium<br>51   | 24<br>Cr<br>chromium<br>52   | 25<br>Mn<br>manganese<br>55 | 26<br>Fe<br>iron<br>56       | 27<br>Co<br>cobalt<br>59     | 28<br>Ni<br>nickel<br>59       | 29<br>Cu<br>copper<br>64      | 30<br>Zn<br>zinc<br>65        | 31<br>Ga<br>gallium<br>70   | 32<br>Ge<br>germanium<br>73   | 33<br>As<br>arsenic<br>75   | 34<br>Se<br>selenium<br>79    | 35<br>Br<br>bromine<br>80     | 36<br>Kr<br>krypton<br>84  |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |        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                      |                              |                              |                              |                              |
| 37<br>Rb<br>rubidium<br>85 | 38<br>Sr<br>strontium<br>88 | 39<br>Y<br>yttrium<br>89  | 40<br>Zr<br>zirconium<br>91     | 41<br>Nb<br>niobium<br>93   | 42<br>Mo<br>molybdenum<br>96 | 43<br>Tc<br>technetium<br>— | 44<br>Ru<br>ruthenium<br>101 | 45<br>Rh<br>rhodium<br>103   | 46<br>Pd<br>palladium<br>106   | 47<br>Ag<br>silver<br>108     | 48<br>Cd<br>cadmium<br>112    | 49<br>In<br>indium<br>115   | 50<br>Sn<br>tin<br>119        | 51<br>Sb<br>antimony<br>122 | 52<br>Te<br>tellurium<br>128  | 53<br>I<br>iodine<br>127      | 54<br>Xe<br>xenon<br>131   |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |          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                  |                              |                              |                              |                              |
| 55<br>Cs<br>caesium<br>133 | 56<br>Ba<br>barium<br>137   | 57–71<br>lanthanoids  | 72<br>Hf<br>hafnium<br>178      | 73<br>Ta<br>tantalum<br>181 | 74<br>W<br>tungsten<br>184   | 75<br>Re<br>rhenium<br>186  | 76<br>Os<br>osmium<br>190    | 77<br>Ir<br>iridium<br>192   | 78<br>Pt<br>platinum<br>195    | 79<br>Au<br>gold<br>197       | 80<br>Hg<br>mercury<br>201    | 81<br>Tl<br>thallium<br>204 | 82<br>Pb<br>lead<br>207       | 83<br>Bi<br>bismuth<br>209  | 84<br>Po<br>polonium<br>—     | 85<br>At<br>astatine<br>—     | 86<br>Rn<br>radon<br>—     |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                       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              |                              |                              |                              |                              |
| 87<br>Fr<br>francium<br>—  | 88<br>Ra<br>radium<br>—     | 89–103<br>actinoids   | 104<br>Rf<br>rutherfordium<br>— | 105<br>Db<br>dubnium<br>—   | 106<br>Sg<br>seaborgium<br>— | 107<br>Bh<br>bohrium<br>—   | 108<br>Hs<br>hassium<br>—    | 109<br>Mt<br>meitnerium<br>— | 110<br>Ds<br>darmstadtium<br>— | 111<br>Rg<br>roentgenium<br>— | 112<br>Cn<br>copernicium<br>— | 114<br>Fl<br>flerovium<br>— | 116<br>Lv<br>livermorium<br>— | 118<br>Og<br>oganeson<br>—  | 119<br>Uue<br>unbinilium<br>— | 120<br>Uub<br>unbinilium<br>— | 121<br>Uut<br>untrium<br>— | 122<br>Uuq<br>unquadium<br>— | 123<br>Uuq<br>unquadium<br>— | 124<br>Uuq<br>unquadium<br>— | 125<br>Uuq<br>unquadium<br>— | 126<br>Uuq<br>unquadium<br>— | 127<br>Uuq<br>unquadium<br>— | 128<br>Uuq<br>unquadium<br>— | 129<br>Uuq<br>unquadium<br>— | 130<br>Uuq<br>unquadium<br>— | 131<br>Uuq<br>unquadium<br>— | 132<br>Uuq<br>unquadium<br>— | 133<br>Uuq<br>unquadium<br>— | 134<br>Uuq<br>unquadium<br>— | 135<br>Uuq<br>unquadium<br>— | 136<br>Uuq<br>unquadium<br>— | 137<br>Uuq<br>unquadium<br>— | 138<br>Uuq<br>unquadium<br>— | 139<br>Uuq<br>unquadium<br>— | 140<br>Uuq<br>unquadium<br>— | 141<br>Uuq<br>unquadium<br>— | 142<br>Uuq<br>unquadium<br>— | 143<br>Uuq<br>unquadium<br>— | 144<br>Uuq<br>unquadium<br>— | 145<br>Uuq<br>unquadium<br>— | 146<br>Uuq<br>unquadium<br>— | 147<br>Uuq<br>unquadium<br>— | 148<br>Uuq<br>unquadium<br>— | 149<br>Uuq<br>unquadium<br>— | 150<br>Uuq<br>unquadium<br>— | 151<br>Uuq<br>unquadium<br>— | 152<br>Uuq<br>unquadium<br>— | 153<br>Uuq<br>unquadium<br>— | 154<br>Uuq<br>unquadium<br>— | 155<br>Uuq<br>unquadium<br>— | 156<br>Uuq<br>unquadium<br>— | 157<br>Uuq<br>unquadium<br>— | 158<br>Uuq<br>unquadium<br>— | 159<br>Uuq<br>unquadium<br>— | 160<br>Uuq<br>unquadium<br>— | 161<br>Uuq<br>unquadium<br>— | 162<br>Uuq<br>unquadium<br>— | 163<br>Uuq<br>unquadium<br>— | 164<br>Uuq<br>unquadium<br>— | 165<br>Uuq<br>unquadium<br>— | 166<br>Uuq<br>unquadium<br>— | 167<br>Uuq<br>unquadium<br>— | 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200<br>Uuq<br>unquadium<br>— | 201<br>Uuq<br>unquadium<br>— | 202<br>Uuq<br>unquadium<br>— | 203<br>Uuq<br>unquadium<br>— | 204<br>Uuq<br>unquadium<br>— | 205<br>Uuq<br>unquadium<br>— | 206<br>Uuq<br>unquadium<br>— | 207<br>Uuq<br>unquadium<br>— | 208<br>Uuq<br>unquadium<br>— | 209<br>Uuq<br>unquadium<br>— | 210<br>Uuq<br>unquadium<br>— | 211<br>Uuq<br>unquadium<br>— | 212<br>Uuq<br>unquadium<br>— | 213<br>Uuq<br>unquadium<br>— | 214<br>Uuq<br>unquadium<br>— | 215<br>Uuq<br>unquadium<br>— | 216<br>Uuq<br>unquadium<br>— | 217<br>Uuq<br>unquadium<br>— | 218<br>Uuq<br>unquadium<br>— | 219<br>Uuq<br>unquadium<br>— | 220<br>Uuq<br>unquadium<br>— | 221<br>Uuq<br>unquadium<br>— | 222<br>Uuq<br>unquadium<br>— | 223<br>Uuq<br>unquadium<br>— | 224<br>Uuq<br>unquadium<br>— | 225<br>Uuq<br>unquadium<br>— | 226<br>Uuq<br>unquadium<br>— | 227<br>Uuq<br>unquadium<br>— | 228<br>Uuq<br>unquadium<br>— | 229<br>Uuq<br>unquadium<br>— | 230<br>Uuq<br>unquadium<br>— | 231<br>Uuq<br>unquadium<br>— | 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264<br>Uuq<br>unquadium<br>— | 265<br>Uuq<br>unquadium<br>— | 266<br>Uuq<br>unquadium<br>— | 267<br>Uuq<br>unquadium<br>— | 268<br>Uuq<br>unquadium<br>— | 269<br>Uuq<br>unquadium<br>— | 270<br>Uuq<br>unquadium<br>— | 271<br>Uuq<br>unquadium<br>— | 272<br>Uuq<br>unquadium<br>— | 273<br>Uuq<br>unquadium<br>— | 274<br>Uuq<br>unquadium<br>— | 275<br>Uuq<br>unquadium<br>— | 276<br>Uuq<br>unquadium<br>— | 277<br>Uuq<br>unquadium<br>— | 278<br>Uuq<br>unquadium<br>— | 279<br>Uuq<br>unquadium<br>— | 280<br>Uuq<br>unquadium<br>— | 281<br>Uuq<br>unquadium<br>— | 282<br>Uuq<br>unquadium<br>— | 283<br>Uuq<br>unquadium<br>— | 284<br>Uuq<br>unquadium<br>— | 285<br>Uuq<br>unquadium<br>— | 286<br>Uuq<br>unquadium<br>— | 287<br>Uuq<br>unquadium<br>— | 288<br>Uuq<br>unquadium<br>— | 289<br>Uuq<br>unquadium<br>— | 290<br>Uuq<br>unquadium<br>— | 291<br>Uuq<br>unquadium<br>— | 292<br>Uuq<br>unquadium<br>— | 293<br>Uuq<br>unquadium<br>— | 294<br>Uuq<br>unquadium<br>— | 295<br>Uuq<br>unquadium<br>— | 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456<br>Uuq<br>unquadium<br>— | 457<br>Uuq<br>unquadium<br>— | 458<br>Uuq<br>unquadium<br>— | 459<br>Uuq<br>unquadium<br>— | 460<br>Uuq<br>unquadium<br>— | 461<br>Uuq<br>unquadium<br>— | 462<br>Uuq<br>unquadium<br>— | 463<br>Uuq<br>unquadium<br>— | 464<br>Uuq<br>unquadium<br>— | 465<br>Uuq<br>unquadium<br>— | 466<br>Uuq<br>unquadium<br>— | 467<br>Uuq<br>unquadium<br>— | 468<br>Uuq<br>unquadium<br>— | 469<br>Uuq<br>unquadium<br>— | 470<br>Uuq<br>unquadium<br>— | 471<br>Uuq<br>unquadium<br>— | 472<br>Uuq<br>unquadium<br>— | 473<br>Uuq<br>unquadium<br>— | 474<br>Uuq<br>unquadium<br>— | 475<br>Uuq<br>unquadium<br>— | 476<br>Uuq<br>unquadium<br>— | 477<br>Uuq<br>unquadium<br>— | 478<br>Uuq<br>unquadium<br>— | 479<br>Uuq<br>unquadium<br>— | 480<br>Uuq<br>unquadium<br>— | 481<br>Uuq<br>unquadium<br>— | 482<br>Uuq<br>unquadium<br>— | 483<br>Uuq<br>unquadium<br>— | 484<br>Uuq<br>unquadium<br>— | 485<br>Uuq<br>unquadium<br>— | 486<br>Uuq<br>unquadium<br>— | 487<br>Uuq<br>unquadium<br>— | 488<br>Uuq<br>unquadium<br>— | 489<br>Uuq<br>unquadium<br>— | 490<br>Uuq<br>unquadium<br>— | 491<br>Uuq<br>unquadium<br>— | 492<br>Uuq<br>unquadium<br>— | 493<br>Uuq<br>unquadium<br>— | 494<br>Uuq<br>unquadium<br>— | 495<br>Uuq<br>unquadium<br>— | 496<br>Uuq<br>unquadium<br>— | 497<br>Uuq<br>unquadium<br>— | 498<br>Uuq<br>unquadium<br>— | 499<br>Uuq<br>unquadium<br>— | 500<br>Uuq<br>unquadium<br>— | 501<br>Uuq<br>unquadium<br>— | 502<br>Uuq<br>unquadium<br>— | 503<br>Uuq<br>unquadium<br>— | 504<br>Uuq<br>unquadium<br>— | 505<br>Uuq<br>unquadium<br>— | 506<br>Uuq<br>unquadium<br>— | 507<br>Uuq<br>unquadium<br>— | 508<br>Uuq<br>unquadium<br>— | 509<br>Uuq<br>unquadium<br>— | 510<br>Uuq<br>unquadium<br>— | 511<br>Uuq<br>unquadium<br>— | 512<br>Uuq<br>unquadium<br>— | 513<br>Uuq<br>unquadium<br>— | 514<br>Uuq<br>unquadium<br>— | 515<br>Uuq<br>unquadium<br>— | 516<br>Uuq<br>unquadium<br>— | 517<br>Uuq<br>unquadium<br>— | 518<br>Uuq<br>unquadium<br>— | 519<br>Uuq<br>unquadium<br>— | 520<br>Uuq<br>unquadium<br>— | 521<br>Uuq<br>unquadium<br>— | 522<br>Uuq<br>unquadium<br>— | 523<br>Uuq<br>unquadium<br>— | 524<br>Uuq<br>unquadium<br>— | 525<br>Uuq<br>unquadium<br>— | 526<br>Uuq<br>unquadium<br>— | 527<br>Uuq<br>unquadium<br>— | 528<br>Uuq<br>unquadium<br>— | 529<br>Uuq<br>unquadium<br>— | 530<br>Uuq<br>unquadium<br>— | 531<br>Uuq<br>unquadium<br>— | 532<br>Uuq<br>unquadium<br>— | 533<br>Uuq<br>unquadium<br>— | 534<br>Uuq<br>unquadium<br>— | 535<br>Uuq<br>unquadium<br>— | 536<br>Uuq<br>unquadium<br>— | 537<br>Uuq<br>unquadium<br>— | 538<br>Uuq<br>unquadium<br>— | 539<br>Uuq<br>unquadium<br>— | 540<br>Uuq<br>unquadium<br>— | 541<br>Uuq<br>unquadium<br>— | 542<br>Uuq<br>unquadium<br>— | 543<br>Uuq<br>unquadium<br>— | 544<br>Uuq<br>unquadium<br>— | 545<br>Uuq<br>unquadium<br>— | 546<br>Uuq<br>unquadium<br>— | 547<br>Uuq<br>unquadium<br>— | 548<br>Uuq<br>unquadium<br>— | 549<br>Uuq<br>unquadium<br>— | 550<br>Uuq<br>unquadium<br>— | 551<br>Uuq<br>unquadium<br>— | 552<br>Uuq<br>unquadium<br>— | 553<br>Uuq<br>unquadium<br>— | 554<br>Uuq<br>unquadium<br>— | 555<br>Uuq<br>unquadium<br>— | 556<br>Uuq<br>unquadium<br>— | 557<br>Uuq<br>unquadium<br>— | 558<br>Uuq<br>unquadium<br>— | 559<br>Uuq<br>unquadium<br>— | 560<br>Uuq<br>unquadium<br>— | 561<br>Uuq<br>unquadium<br>— | 562<br>Uuq<br>unquadium<br>— | 563<br>Uuq<br>unquadium<br>— | 564<br>Uuq<br>unquadium<br>— | 565<br>Uuq<br>unquadium<br>— | 566<br>Uuq<br>unquadium<br>— | 567<br>Uuq<br>unquadium<br>— | 568<br>Uuq<br>unquadium<br>— | 569<br>Uuq<br>unquadium<br>— | 570<br>Uuq<br>unquadium<br>— | 571<br>Uuq<br>unquadium<br>— | 572<br>Uuq<br>unquadium<br>— | 573<br>Uuq<br>unquadium<br>— | 574<br>Uuq<br>unquadium<br>— | 575<br>Uuq<br>unquadium<br>— | 576<br>Uuq<br>unquadium<br>— | 577<br>Uuq<br>unquadium<br>— | 578<br>Uuq<br>unquadium<br>— | 579<br>Uuq<br>unquadium<br>— | 580<br>Uuq<br>unquadium<br>— | 581<br>Uuq<br>unquadium<br>— | 582<br>Uuq<br>unquadium<br>— | 583<br>Uuq<br>unquadium<br>— | 584<br>Uuq<br>unquadium<br>— | 585<br>Uuq<br>unquadium<br>— | 586<br>Uuq<br>unquadium<br>— | 587<br>Uuq<br>unquadium<br>— | 588<br>Uuq<br>unquadium<br>— | 589<br>Uuq<br>unquadium<br>— | 590<br>Uuq<br>unquadium<br>— | 591<br>Uuq<br>unquadium<br>— | 592<br>Uuq<br>unquadium<br>— |