

# Answers to End of Chapter 1 test

*The sample answers have been written by the authors. IB may award marks differently.*

**1** D

**2** D

**3** A

**4** A

**5** C

**6** B

**7** D

**8** A

**9** C

**10** C

# Answers to End of Chapter 2 test

*The sample answers have been written by the authors. IB may award marks differently.*

**1 C**

**2 B**

**3 D**

**4 B**

**5 A**

**6 C**

**7 D**

**8 C**

**9 A**

**10 C**

**11 A**

**12 B**

**13 C**

**14 A**

**15 B**

# Answers to End of Chapter 3 test

*The sample answers have been written by the authors. IB may award marks differently.*

**1 B**

**2 C**

**3 D**

**4 C**

**5 D**

**6 C**

**7 B**

**8 B**

**9 A**

**10 D**

**11 D**

**12 C**

**13 B**

**14 B**

**15 A**

# Answers to End of Chapter 4 test

*The sample answers have been written by the authors. IB may award marks differently.*

**1 B**

**2 A**

**3 C**

**4 D**

**5 D**

**6 C**

**7 B**

**8 C**

**9 C**

**10 C**

**11 C**

**12 B**

**13 B**

**14 B**

**15 A**

# Answers to End of Chapter 5 test

*The sample answers have been written by the authors. IB may award marks differently.*

**1** B

**2** A

**3** D

**4** A

**5** B

**6** B

**7** D

**8** C

**9** B

**10** D

**11** C

# Answers to End of Chapter 6 test

*The sample answers have been written by the authors. IB may award marks differently.*

**1** A

**2** C

**3** C

**4** C

**5** D

**6** B

**7** C

**8** D

**9** A

**10** B

**11** B

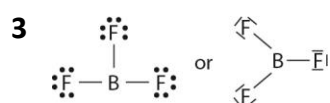
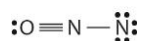
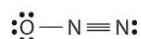
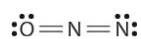
**12** D

# Answers to End of Chapter 7 test

*The sample answers have been written by the authors. IB may award marks differently.*

1 A

2 any two of the three Lewis structures shown:



ignore bond angles

4 C

5 B

6 A

7 C

8  $\text{CH}_2\text{CH}_2 < \text{CH}_3\text{CHO} < \text{CH}_3\text{CH}_2\text{OH}$

$\text{CH}_2\text{CH}_2$  non-polar—only London forces between molecules;

$\text{CH}_3\text{CHO}$  permanent dipole—permanent dipole interactions between molecules stronger than just London forces and higher  $M_r$

$\text{CH}_3\text{CH}_2\text{OH}$  hydrogen bonding between molecules;

reference to strength of intermolecular forces any 4

# Answers to End of Chapter 8 test

*The sample answers have been written by the authors. IB may award marks differently.*

- 1** Diagram showing **[2]**  
lattice of positive ions (three rows minimum)  
surrounded by a sea of delocalised electrons.
- 2** The delocalised electrons **[2]**  
are free to move.
- 3** The layers of positive ions **[2]**  
can slide over each other.
- 4** aluminium **[3]**  
Aluminium has a 3+ metal ion charge (larger than Mg 2+ and Na 1+).  
Greater attraction between the metal ion and the delocalised electrons, requiring more energy to break the electrostatic force of attraction.
- 5** Aluminium has a lower density than steel. **[3]**  
Makes it easier and cheaper for planes to fly/less energy/fuel required.  
Still relatively strong.



# Answers to End of Chapter 9 test

The sample answers have been written by the authors. IB may award marks differently.

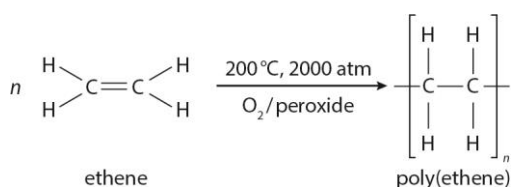
1 Different sized atoms [2]

stop the layers of positive ions sliding over each other  
requires more energy, making them harder

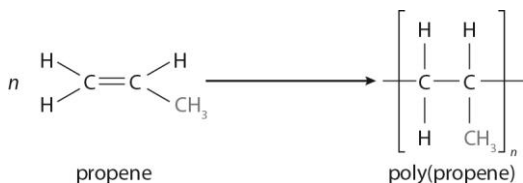
2 The double bond of the monomer is broken. [2]

Single bonds are formed between the monomers to make the polymer.

3 [2]



4 [3]



5 chloroethene [1]

# Answers to End of Chapter 10 test

*The sample answers have been written by the authors. IB may award marks differently.*

<b>1</b>	<b>D</b>	<b>[1]</b>
<b>2</b>	<b>A</b>	<b>[1]</b>
<b>3</b>	<b>C</b>	<b>[1]</b>
<b>4</b>	<b>B</b>	<b>[1]</b>
<b>5</b>	<b>D</b>	<b>[1]</b>
<b>6</b>	<b>C</b>	<b>[1]</b>
<b>7</b>	<b>B</b>	<b>[1]</b>
<b>8</b>	<b>D</b>	<b>[1]</b>
<b>9</b>	<b>A</b>	<b>[1]</b>
<b>10</b>	<b>A</b>	<b>[1]</b>
<b>11</b>	<b>C</b>	<b>[1]</b>
<b>12</b>	<b>C</b>	<b>[1]</b>
<b>13</b>	<b>B</b>	<b>[1]</b>
<b>14</b>	<b>A</b>	<b>[1]</b>
<b>15</b>	<b>B</b>	<b>[1]</b>

# Answers to End of Chapter 11 test

*The sample answers have been written by the authors. IB may award marks differently.*

<b>1</b>	<b>D</b>	<b>[1]</b>
<b>2</b>	<b>B</b>	<b>[1]</b>
<b>3</b>	<b>C</b>	<b>[1]</b>
<b>4</b>	<b>D</b>	<b>[1]</b>
<b>5</b>	<b>C</b>	<b>[1]</b>
<b>6</b>	<b>A</b>	<b>[1]</b>
<b>7</b>	<b>B</b>	<b>[1]</b>
<b>8</b>	<b>C</b>	<b>[1]</b>
<b>9</b>	<b>A</b>	<b>[1]</b>
<b>10</b>	<b>C</b>	<b>[1]</b>
<b>11</b>	<b>D</b>	<b>[1]</b>
<b>12</b>	<b>A</b>	<b>[1]</b>
<b>13</b>	<b>B</b>	<b>[1]</b>
<b>14</b>	<b>C</b>	<b>[1]</b>
<b>15</b>	<b>D</b>	<b>[1]</b>

# Answers to End of Chapter 12 test

*The sample answers have been written by the authors. IB may award marks differently.*

1 C [1]

2 D [1]

3 A [1]

4 B [1]

5 A [1]

6 B [1]

7  $q = mc\Delta$

$$q = 350 \times 4.18 \times (23 - 14)$$

$$q = 13\,167 \text{ J or } 13.167 \text{ kJ} \quad [1]$$

$$\text{mol of ethanol} = \text{mass} / M_r$$

$$= 0.69 / 46.08$$

$$= 0.015 \quad [1]$$

$$\Delta = q / \text{mol} \quad [1]$$

$$= 13.167 / 0.015$$

$$= -877.8 \text{ kJ/mol} \quad [1]$$

# Answers to End of Chapter 13 test

The sample answers have been written by the authors. IB may award marks differently.

1 C [1]

2 A [1]

3 D [1]

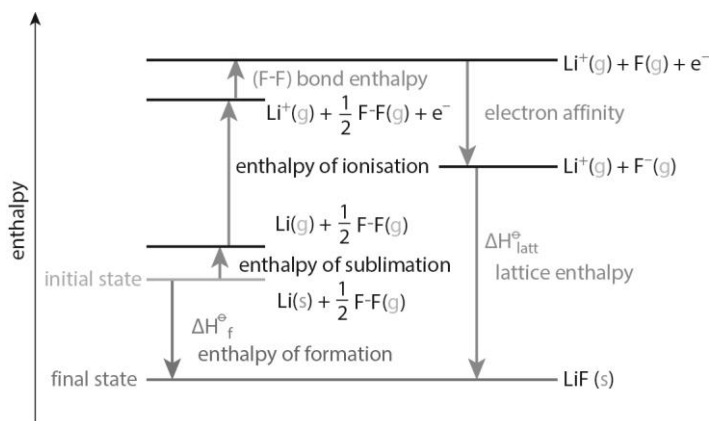
4 C [1]

5 C [1]

6  $\Delta H = -284 + (-518) + (2 \times -44)$   
 $= -890 \text{ kJ}$  [2]

7  $\Delta H_f = -74.9 + (-284) - (-241.8)$   
 $= -117.9$  [3]

8 [6]



# Answers to End of Chapter 14 test

*The sample answers have been written by the authors. IB may award marks differently.*

- |    |   |     |
|----|---|-----|
| 1  | B | [1] |
| 2  | C | [1] |
| 3  | D | [1] |
| 4  | A | [1] |
| 5  | D | [1] |
| 6  | D | [1] |
| 7  | C | [1] |
| 8  | D | [1] |
| 9  | A | [1] |
| 10 | D | [1] |

# Answers to End of Chapter 15 test

*The sample answers have been written by the authors. IB may award marks differently.*

- |   |   |     |
|---|---|-----|
| 1 | B | [1] |
| 2 | A | [1] |
| 3 | B | [1] |
| 4 | D | [1] |
| 5 | B | [1] |
| 6 | D | [1] |
| 7 | A | [1] |
| 8 | A | [1] |

# Answers to End of Chapter 16 test

*The sample answers have been written by the authors. IB may award marks differently.*

- |    |   |     |
|----|---|-----|
| 1  | C | [1] |
| 2  | B | [1] |
| 3  | A | [1] |
| 4  | C | [1] |
| 5  | C | [1] |
| 6  | D | [1] |
| 7  | B | [1] |
| 8  | B | [1] |
| 9  | A | [1] |
| 10 | A | [1] |



# Answers to End of Chapter 17 test

*The sample answers have been written by the authors. IB may award marks differently.*

- |   |   |     |
|---|---|-----|
| 1 | B | [1] |
| 2 | D | [1] |
| 3 | A | [1] |
| 4 | C | [1] |
| 5 | C | [1] |
| 6 | B | [1] |
| 7 | C | [1] |
| 8 | B | [1] |

# Answers to End of Chapter 18 test

*The sample answers have been written by the authors. IB may award marks differently.*

- |   |   |     |
|---|---|-----|
| 1 | B | [1] |
| 2 | C | [1] |
| 3 | A | [1] |
| 4 | D | [1] |
| 5 | D | [1] |
| 6 | C | [1] |
| 7 | D | [1] |
| 8 | B | [1] |

# Answers to End of Chapter 19 test

*The sample answers have been written by the authors. IB may award marks differently.*

- |    |   |     |
|----|---|-----|
| 1  | C | [1] |
| 2  | A | [1] |
| 3  | D | [1] |
| 4  | C | [1] |
| 5  | C | [1] |
| 6  | C | [1] |
| 7  | B | [1] |
| 8  | D | [1] |
| 9  | B | [1] |
| 10 | D | [1] |
| 11 | C | [1] |
| 12 | D | [1] |
| 13 | A | [1] |
| 14 | A | [1] |
| 15 | D | [1] |

# Answers to End of Chapter 20 test

*The sample answers have been written by the authors. IB may award marks differently.*

<b>1</b>	<b>B</b>	<b>[1]</b>
<b>2</b>	<b>D</b>	<b>[1]</b>
<b>3</b>	<b>D</b>	<b>[1]</b>
<b>4</b>	<b>C</b>	<b>[1]</b>
<b>5</b>	<b>B</b>	<b>[1]</b>
<b>6</b>	<b>A</b>	<b>[1]</b>
<b>7</b>	<b>B</b>	<b>[1]</b>
<b>8</b>	<b>D</b>	<b>[1]</b>
<b>9</b>	<b>B</b>	<b>[1]</b>
<b>10</b>	<b>B</b>	<b>[1]</b>
<b>11</b>	<b>B</b>	<b>[1]</b>
<b>12</b>	<b>A</b>	<b>[1]</b>
<b>13</b>	<b>D</b>	<b>[1]</b>
<b>14</b>	<b>C</b>	<b>[1]</b>
<b>15</b>	<b>D</b>	<b>[1]</b>

# Answers to End of Chapter 21 test

*The sample answers have been written by the authors. IB may award marks differently.*

- |   |   |     |
|---|---|-----|
| 1 | D | [1] |
| 2 | B | [1] |
| 3 | D | [1] |
| 4 | A | [1] |
| 5 | C | [1] |
| 6 | B | [1] |
| 7 | D | [1] |
| 8 | A | [1] |

# Answers to End of Chapter 22 test

*The sample answers have been written by the authors. IB may award marks differently.*

<b>1</b>	<b>C</b>	<b>[1]</b>
<b>2</b>	<b>C</b>	<b>[1]</b>
<b>3</b>	<b>D</b>	<b>[1]</b>
<b>4</b>	<b>A</b>	<b>[1]</b>
<b>5</b>	<b>C</b>	<b>[1]</b>
<b>6</b>	<b>A</b>	<b>[1]</b>
<b>7</b>	<b>C</b>	<b>[1]</b>
<b>8</b>	<b>C</b>	<b>[1]</b>
<b>9</b>	<b>D</b>	<b>[1]</b>
<b>10</b>	<b>C</b>	<b>[1]</b>
<b>11</b>	<b>C</b>	<b>[1]</b>
<b>12</b>	<b>D</b>	<b>[1]</b>