MARK SCHEMES – Chemistry Unit 9/10 homework

Q1 (a) $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$

1

(b) toxic

accept causes death

1

acid rain
or
respiratory problems

accept respiratory problems / asthma

1

global dimming

1

2) (a) carbon dioxide (decreased) **one** from:

***1** mark for one reason for each gas*

- photosynthesis
- formation of (sedimentary) rocks
- formation of fossil fuels
- dissolved in oceans

ignore respiration

1

nitrogen (increased) **one** from:

- volcanoes / volcanic activity
- ammonia reacted with oxygen

1

oxygen (increase):

- photosynthesis

1

3) (a) Safe to drink

1

(b) the gas is chlorine / Cl_2

1

which sterilises water

1

4) (b) solid materials

1

removed by filtration **or** by passing through filter beds

1

microbes

1

are killed by sterilisation

1

allow killed by chlorine / ozone / ultraviolet light

5) any **four** from:

- resources for manufacture are limited
- recycling reduces the use of resources
- reduces energy consumption in extraction / manufacture
- reduces waste from processing and extraction
- reduces environmental impact of extraction

4

6) (a) **Level 2 (3-4 marks):**
A judgement, strongly linked and logically supported by a sufficient range of correct reasons, is given.

Level 1 (1-2 marks):
Relevant points are made. These are not logically linked.

Level 0
No relevant content.

Indicative content

raw material
- wood will not run out
- aluminium (ore) will run out
- more expensive to process aluminium from its raw material

mass of frame
- wooden frame more expensive to transport
- wooden frame uses more fuel to transport
- wooden frame more difficult to handle / erect

useful lifetime
- wooden greenhouse would need replacing more often
- fewer aluminium greenhouses needed over time

end of useful life
- both materials can be put to further use
- aluminium can be recycled repeatedly

4

(b) $\frac{12000}{80}$

1

= 150

1

*an answer of 150 scores **2** marks*

(c) any **two** from:

- conserves finite ores
  allow ores will last longer
- uses less energy
- lower energy costs
- reduces landfill
  allow less waste

2