

# MARK SCHEME

# GCSE

## CHEMISTRY

## AQA - COMBINED SCIENCE

---

C10 - TEST 6  
USING RESOURCES  
Advanced

## Mark schemes

1.

### Reused

- saves raw materials / crude oil
  - *unable to reuse many times*
  - *bags easily split*
- saves energy / fuel / transport
- fewer bags needed / made
- reduces carbon / CO<sub>2</sub> emissions
- reduces use of landfill
- saves cost of a new bag
- no waste

1

### Recycled

- saves raw materials / crude oil
  - *has to be collected / transported / washed / separated / melted*
- saves energy / use of fuel
- reduces carbon / CO<sub>2</sub> emissions
- reduces use of landfill
- can be used for new products
  - *ignore uses energy*

1

### Burned

- heat / energy released can be used (for heating / generating electricity)
  - *has to be collected / transported*
- reduces use of landfill
  - *wastes the resource / plastic*
  - *releases harmful gases / toxic gases / CO<sub>2</sub>*

1

Dumped

- collected / transported with household waste
  - *wastes the resource*
  - *plastic uses landfill*
- (slowly) biodegrades **or** produces methane which can be used as a fuel
  - *produces methane which is a greenhouse gas / could cause explosions*
- (not biodegradable so) does not release CO<sub>2</sub> / green house gas into the air
  - *not biodegradable / take years to decompose*

ignore cost / litter / waste / global warming / habitats unless mentioned above

1

[4]

2.

(a) 16(.0)

1

(b) advantage: more accurate result  
*do **not** accept reliable*

1

disadvantage: takes a long(er) time, more energy needed (to heat more water)  
*ignore expensive*

1

(c) pure: no dissolved solids / impurities  
**or** no (dissolved) chlorine  
*allow only water / H<sub>2</sub>O*  
*ignore safe to drink*

**and**

potable: has dissolved solids / impurities  
**or** has (dissolved) chlorine  
*ignore safe to drink*

1

*a clear comparative statement referring to solutes gains the mark*

- (d) groundwater:
- filtered  
*allow acceptable method of filtration* 1
  - sterilised  
*allow acceptable method of sterilisation* 1

- groundwater:
- distilled **or** reverse osmosis  
*allow desalination*  
*ignore salt removed*  
*ignore boiling alone*  
*ignore filtering*  
*do **not** accept fractional distillation* 1

- (e)  $\frac{2.2}{100} \times 6.50$  1
- (=) 0.143 (g) 1
- an answer of 0.143 (g)*  
*or 0.14 (g) scores 2 marks* 1

[9]

3.

- (a) (number of deaths =) 91 **and**  
(number of cases =)  $3.4 \times 10^3$   
*allow readings in range 90 to 92*  
*allow readings in range  $3.3 \times 10^3$  to  $3.5 \times 10^3$*  1
- $$\frac{91}{3.4 \times 10^3} (\times 100)$$
- allow correct substitution of incorrect readings from 2004* 1
- (=) 2.68  
*allow correct calculation using incorrect readings from 2004* 1
- 2.7 (%) 1
- an answer of 2.7 (%) scores 4 marks*

- (b) the number of deaths peaked (to 120 in 2008)  
*the percentage deaths peaked (to 3.2%)* 1
- (but) the number of reported cases fell / did not rise 1  
*ignore numbers*
- (c) we don't know what the data was before 2002 1
- (d) any **two** from:  
 • poor sanitation  
 • **or** idea of poor toilet hygiene  
*ignore overcrowding*  
 • drinking contaminated water  
 • eating contaminated food  
 • **or** using contaminated water to grow crops 2
- (e) air / water under the sheet is warmed by the Sun 1
- (so) water evaporates (from the ground / contaminated water) 1
- (then water) condenses on (the underside of) the plastic sheet 1
- the weight causes a drip point in the centre of the plastic sheet 1
- (so clean) water drips into the can (continuously ready for drinking through the plastic tubing) 1
- (f) UV (light)  
*ignore ionising radiation* 1
- causes mutations in the DNA  
*causes breakage(s) in the DNA* 1
- (so) bacteria cannot replicate (and so die out)  
*(so) cellular processes stop* 1

[17]