

Identification of Common Gases

Mark Scheme

| | |
|------------------|---------------------------------------|
| Level | GCSE (9-1) |
| Subject | Combined Science: Trilogy - Chemistry |
| Exam Board | AQA |
| Topic | 5.8 Chemical Analysis |
| Sub-Topic | Identification of Common Gases |
| Difficulty Level | Bronze Level |
| Booklet | Mark Scheme |

Time Allowed: 27 minutes

Score: /27

Percentage: /100

Grade Boundaries:

| | | |
|---------------|---|------------|
| M1.(a) | (i) magnesium oxide | 1 |
| | (ii) decomposition | 1 |
| (b) | (i) bar chart | 1 |
| | (ii) more | 1 |
| | (iii) limewater | 1 |
| | turns cloudy / milky <i>accept forms a white precipitate</i> | 1 |
| | | [6] |
| M2.(a) | (i) react | |
| | <i>allow neutralise</i> <i>allow bubbles / fizzes</i> <i>accept produces gas / CO₂F</i> <i>ignore rises</i> | 1 |
| | (ii) stop <u>reacting</u> / <u>producing</u> <i>stops on its own is insufficient allow stop working / bubbling /</i> <i>fizzing</i> | 1 |

the (hydrochloric) acid / (calcium) carbonate is used up
accept because the (calcium) carbonate has neutralised the (hydrochloric) acid

OR

have been used up (1)

the graph line becomes horizontal / levels out (1)

OR

stays the same / no change (1)

ignore reference to graph line

no further reaction (1)

1

(iii) bubble the gas through limewater / calcium hydroxide solution

allow (add) limewater

test must be correct to gain result mark

1

(the solution) goes cloudy

allow milky

1

(b) advantage > Quarrying limestone provides building materials, employment and new road links

1

disadvantage > Quarrying limestone releases dust, and lorries release carbon dioxide from burning diesel fuel

1

[7]

##

(a) F

accept indium / In

1

(b) C
accept sodium / Na
1

(c) A
accept hydrogen / H / H₂
1

[3]

M4. (a) (i) oxygen (not air)
(ii) oxides/monoxides/dioxides
for 1 mark each
Do not allow specific examples
2

(b) (i) water
(ii) sulphur
(iii) carbon
for 1 mark each
3

(c) gives out/releases heat/energy
for 1 mark
1

(d) (i) carbon dioxide
(ii) carbon
for 1 mark each
(allow correct symbols/formulae)
2

[8]

- M5.** (a) nitrogen / N₂
[Do not allow N or N⁺] for 1 mark
- (b) heat
for 1 mark
- (c) carbon dioxide / CO₂
for 1 mark

[3]