Practice Question Set For GCSE
Subject : Biology
Paper-1 Topic: B2 Organisation

Merit Minds
www.merit-minds.com
Exam Preparation and Free Resources

Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Mark Schemes

Q1.

(a) $6\ CO_2 + 6\ H_2O \rightarrow C_6H_{12}O_6 + 6\ O_2$

1

(b) distance of the pondweed from the lamp

1

(c) bubbles (of gas) would be produced faster

allow more / bigger bubbles of gas would be produced (in a given time)

1

(because) enzymes work faster

allow (because) photosynthesis is controlled by enzymes

allow (because) photosynthesis would be faster

1

(d) any **one** from:

- use an LED (lamp)

  allow use a light that does not emit (a lot of) infrared / thermal radiation
- place a tank / beaker of water between the lamp and tube / pondweed
- put the tube in a beaker of water
- put the tube in a (thermostatically controlled) water bath
- place a piece of glass between the lamp and tube / pondweed

  allow place a heat shield between the lamp and tube / pondweed

1

(e) any **two** from:

- measure the volume of gas produced

  allow amount for volume allow use a cylinder / gas syringe to collect the gas

- allow the pondweed time to equilibrate

  allow a description of this

- repeat **and** calculate a mean

or

repeat **and** remove anomalies

ignore repeat unqualified

- control the concentration of carbon dioxide (in the water)

  allow put the pondweed in sodium hydrogen carbonate

Downloaded from www.merit-minds.com

(solution) ***or*** *sodium bicarbonate (solution)*

- use the same bulb / lamp

  allow use the same type / size / age / piece of pondweed

  allow record the number of bubbles of gas produced in a longer period of time

2

(f) 3 (bubbles of gas produced per minute)

allow 3.2 (bubbles of gas produced per minute) do ***not*** *accept 3.0 (bubbles of gas produced per minute)*

1

(g) as light intensity decreases the rate of photosynthesis decreases

allow as distance from lamp increases rate of photosynthesis decreases

allow as distance from lamp increases number of bubbles produced decreases

1

(h) all points plotted correctly

allow tolerance of ± ½ a small square

allow ***1*** *mark for four points plotted correctly*

2

line of best fit through their points

do ***not*** *accept line extended to 0, 0*

ignore extrapolations of line

1

(i) 8

allow correct value from their line ± ½ a small square

allow value in range 6 to 9 if a curved line of best fit is not drawn

1

[13]

Downloaded from www.merit-minds.com

Q2.

Level 3: The method would lead to the production of a valid outcome. All key steps are identified and logically sequenced.

5–6

Level 2: The method would not necessarily lead to a valid outcome. Most steps are identified, but the method is not fully logically sequenced.

3–4

Level 1: The method would not lead to a valid outcome. Some relevant steps are identified, but links are not made clear.

1–2

No relevant content

0

Indicative content

Protein
- grind up food
- add Biuret (reagent / solution)

or
add copper sulfate (solution) **and** sodium hydroxide (solution)
or
add Biuret 1 and Biuret 2
- turns purple / lilac

Starch
- add iodine (solution)
- turns black / blue-black / dark blue

- ignore blue / purple

Sugar
- grind up food
- mix with water
- add Benedict's (reagent / solution)
- heat mixture (≥ 65 °C)
- in a water bath
- turns (brick) red / orange / brown / green / yellow

For Level 3 correct references to all three tests are needed.

[6]

Downloaded from www.merit-minds.com