Practice Question Set For GCSE
Subject : Biology
Paper-1 Topic: B4 Bioenergetics

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Name of the Student:_____
Max. Marks : 20 Marks **Time : 20 Minutes**

Mark Schemes

Q1.

(a) The starch is stored for use later

no mark if more than one box is ticked

1

(b) (i) any **two** from:

*do **not** accept temperature*
apply list principle
ignore reference to time

- carbon dioxide (concentration)
- light intensity
- light colour / wavelength

*allow **1** mark for light if neither intensity or colour are awarded*

- pH
- size / amount of pondweed / plant
- same / species / type pondweed
- amount of water <u>in the tube</u>

ignore amount of water alone

2

(ii) number / amount of bubbles **or** amount of gas / oxygen

allow volume of bubbles (together)
ignore 'the bubbles' unqualified

1

(relevant reference to) time / named time interval

allow how long it bubbles for
*do **not** accept time bubbles start / stop*
ignore speed / rate of bubbling
ignore instruments
*do **not** accept other factors eg temperature*
*accept how many bubbles per minute for **2** marks*

1

(c) (i) temperature

allow heat / cold / °C

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1

(ii) carbon dioxide / CO_2

allow CO2

*do **not** accept CO^2*

1

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Q2.

(a) A

no mark - can be specified in reason part
if B given - no marks throughout
if unspecified + 2 good reasons = 1 mark

high(er) pressure in A

allow opposite for B
*do **not** accept 'zero pressure' for B*

pulse / described in A

accept fluctuates / 'changes'
allow reference to beats / beating
ignore reference to artery pumping

2

(b) (i) 17

1

(ii) 68

accept correct answer from student's (b)(i) × 4

1

(c) oxygen / oxygenated blood

allow adrenaline
ignore air

glucose / sugar

extra wrong answer cancels - eg sucrose / starch / glycogen / glucagon / water
allow fructose
ignore energy
ignore food

2

[6]

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Q3.

(a) (i) rate of chemical reactions (in the body)

1

(ii) any **two** from:

- heredity / inheritance / genetics
- proportion of muscle to fat **or** (body) mass
  allow (body) weight / BMI
- age / growth rate
- gender
  accept hormone balance or environmental temperature
  ignore exercise / activity

2

(b) (i) 77

*correct answer with or without working gains **2** marks*
*allow **1** mark for 70 / 56 **or** 1.25 **or** 5*

2

(ii) increase exercise

accept a way of increasing exercise

1

reduce food intake

accept examples such as eat less fat / sugar
*allow go on a diet **or** take in fewer calories*
ignore lose weight
ignore medical treatments such as gastric band / liposuction

1

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