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

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Name of the Student:_____
Max. Marks : 22 Marks **Time : 22 Minutes**

Mark Schemes

Q1.

(a) water [1]

oxygen [1]

(sun) light or solar [1]
*do **not** accept sun's*

chlorophyll [1]
*do **not** accept chloroplasts*

4

(b) any **two** from:

stored as fructose
stored as sucrose
stored as starch
stored as oil **or** lipid
moved or transported away <u>in the phloem</u>
*do **not** accept "stored" by itself*

respired or burnt up for energy or
fuel changed to protein
changed to cellulose
changed to fructose
changed to starch
changed to oil or lipid
*do **not** accept "food for plant"*
*do **not** accept "used up" by itself*

2

(c) (i) roots or root hair (cells)

1

(ii) the mineral salts are (dissolved) in water [1]

water transports salts throughout the plant
or water enables osmosis or diffusion to take place [1]

2

(d) (i) plants grow better with some nutrients than none
or
plants grow better with nitrates than without
comparison is needed

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accept "faster" as equivalent to "better"
accept don't grow well with only water

1

(ii) 0.14(g)

*units **not** needed*

1

(iii) making protein **or** amino acids

*do **not** accept help them grow*

*accept named protein **or** DNA **or** chlorophyll*

1

any **two** from:

(iv) type **or** variety **or** starting weight **or**

2

(iii) size of seedlings

keep the environment the same
*only if light **or** temperature **or** day length not already credited*

light
temperature not heat
time of growth

*do **not** accept the same equipment*
*do **not** accept help them grow*

1

day length
amount of culture solution **or/**size of

accept named protein, DNA chlorophyll

boiling tube
number of seedlings per tube
pH
CO_2
humidity

[15]

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Q2.

(a) (i) count the pulse **or** count beats in artery in wrist neck **or** feel the pulse **or** take the pulse **or** find the pulse

*accept use of heart monitor **or** heart meter*

1

(ii) 80

2 marks for correct answer

*1f answer incorrect allow **1** mark for showing 8000 divided by 100 **or** indicating cardiac output divided by stroke volume*

2

(iii) Increased activity stroke volume
falls / gets less / should get higher / reach a peak

*accept does not increase **or** changes from 134 cm^3 to 127 cm^3*

1

(iv) 1ncreased / more ventricle contractions

*accept heart beat faster **or** it beats faster **or** more powerful contractions*

1

(b) (stronger heart muscle) increases cardiac output **or** increases stroke volume

*accept pumps more blood (per beat) **or** pumps blood faster*

ignore heart bigger

1

so more (oxygenated) blood can be sent <u>to muscles</u>

accept more oxygen sent to muscles

1

[7]

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