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) (i) carbon dioxide / CO_2 (*reject* CO)

(ii) oxygen / O_2 / O (water vapour neutral)

for 1 mark each

2

(b) (provides) energy

for one mark

1

(c) starch insoluble therefore water not taken in by osmosis
or
sugar is soluble / has small molecules may diffuse out therefore lost
*(*ignore *ref. to cells bursting)*

or
starch has large molecules
cannot diffuse therefore retained

for 1 mark each

3

[6]

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Q2.

(i) 0.25 × 100 / 25

gains 1 mark

but

1%

gains 2 *marks*

2

(ii) muscle contraction / limb movement / moving around / chewing
heartbeat / breathing / internal muscle activity
maintaining body temperature / keeps body warm
active uptake synthesising substances (*reject* growth)

any three for 1 mark each

3

[5]

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Q3.

(a) low in winter / named months /when the days are short

accept increases in spring / Dec – June

1

high in summer / named month(s) / (when days are long

decreases in autumn / June – December

1

reasonable quantitative statement

accept any reasonable calculated / translated quantitative statement

higher in summer than in winter for 2 marks
comparative statements may be worth 2 marks
but
8/11 times higher in summer than in winter for 3 marks

1

(b) no artificial light given in summer / light only given in winter

since natural light greatly exceeds minimum / 600 J (required to produce tomatoes)

accept day length if linked to light energy

OR

light only given in winter

as natural light less than the minimum needed (to grow them) or 600 J

OR

for 2 marks:
percentage increase in growth from artificial] light only significant in winter

2

[5]

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Q4.

carbon dioxide concentration

1

since atmospheric concentration very low / value give e.g. 0.03%

allow carbon dioxide used up

1

temperature high

allow if light chosen as a factor

1

light intensity high

allow If temperature chosen as a factor

1

[4]

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