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

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Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Mark Schemes

Q1.

(a) person with muscle disease:

allow reverse argument for healthy person

any **three** from:

NB all points are comparative except peak (point 3)
*allow use of **two** approximate figures as a comparison*

- higher resting rate **or** higher at start
- when exercise starts / then increases more / more rapidly
  accept description eg rise …. fall
- peaks (then falls)
- levels off later than healthy person
- higher rate during exercise
  *if no other marks awarded allow **1** mark for 'it's higher'*
- greater range

3

(b) (i) oxygen

accept adrenaline
accept O_2
*do **not** accept O, O2 or O^2*

1

(ii) cannot release sugar / glucose (from glycogen)

or

cannot store glucose / sugar (as glycogen)

1

need to receive glucose / sugar (from elsewhere)
ignore oxygen

1

for energy / respiration / cannot store energy
ignore aerobic / anaerobic

1

[7]

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Q2.

(a) LHS – glucose

1

RHS – water

allow H_2O / H2O

1

(b) so the earthworms' body temperature would change to 20°C

1

(c) (i) 56 or 55 or 54

*if incorrect answer given accept 60 - 5 for **1** mark*
*or 60 – 6 for **1** mark*
*or 60 – 4 for **1** mark*

2

(ii) one-tenth of answer to (c)(i) eg 5.5

1

(at 10°C / lower temperature):

lower rate of respiration

allow chemical reactions slower or enzymes less active
ignore breathing
do not allow anaerobic

1

worms less active / worms release less energy / worms use less energy

1

(d) (i) anomalous result / not in line with other data / does not fit the pattern

1

(ii) more representative / more reliable / can check 'repeatability' / see if get similar values / identify anomalies

ignore valid / more fair
ignore reproducible
ignore 'to remove' anomalies
do not accept more accurate or more precise

1

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