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) eat less fatty food

1

(b) any **two** from:

- strengthens muscles
  - *ignore references to losing weight / mass*
  - *ignore references to immediate effects of exercise on body eg increases heart rate*
  - *ignore makes you healthier*
  - *allow makes you stronger*
  - *allow improves stamina*
- strengthens heart (muscle)
  - *allow keeps your heart healthy*
- reduces risk of (coronary) heart disease / CHD / cardiovascular disease
  - *allow reduces (blood) cholesterol*
  - *allow improves circulation*
- reduces blood pressure
- reduces risk of (Type 2) diabetes
- improves mental health / mood
- improves mobility
  - *allow strengthens bones*
  - *allow boosts immunity*
  - *allow reduces risk of (some) cancers*
  - *allow makes you fitter*
  - *ignore improves a person's appearance*

2

(c) glucose + oxygen → carbon dioxide + water

1

(d) C

1

(e) any **two** from:

- lowest / lower resting breathing rate
  - *statements must be comparative*

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- lowest / lower breathing rate after exercise
- lowest / lower increase in breathing rate
- least amount of time for breathing rate to return to resting rate
  allow less time for breathing rate to return to resting rate
  allow shortest recovery time

2

(f) any **two** from:
- only based on one measurement
- person B may have done less intense exercise
  allow person B may have done a different type of exercise
- other factors (besides breathing rate) indicate fitness
  eg stamina / strength / speed
  allow age / sex / body mass may not have been controlled
  ignore references to medical conditions

2

(g) deeper breathing
allow heavier breathing
ignore breathing rate increases

1

increased heart rate
allow blood flows faster
ignore more blood flows around body
allow increased (body) temperature
allow (increased) sweating
allow increased blood flow to skin
*do **not** accept lactic acid is produced 1*

1

(h) oxygen
word takes precedence
allow O_2
ignore O / O^2

1

lactic acid

1

[13]

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Q2.

(a) root (hairs)

1

(b) carbon

in either order

allow carbon dioxide

1

water

if no other mark awarded allow oxygen for 1 mark

1

(c) **Level 2:** Scientifically relevant facts, events or processes are identified and given in detail to form an accurate account.

4–6

Level 1: Facts, events or processes are identified and simply stated but their relevance is not clear.

1–3

No relevant content

0

Indicative content

- microorganisms decay (the dead plant)
- microorganisms respire
- using carbon compounds / glucose
- releasing carbon dioxide
- into the atmosphere
- new plants take in carbon dioxide
- (carbon dioxide) for photosynthesis
- making glucose
- converted into correctly named cell materials

(when plants are decayed)

Nitrate / mineral ions
- are released into soil
- to be taken up by new growing plants

Water
- plants dehydrate or water evaporates when they die
- recycled as rain needed by growing plants

[9]

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