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

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Name of the Student:_____
Max. Marks : 25 Marks **Time : 25 Minutes**

Mark Schemes

Q1.

(a) aerobic respiration

1

(b) 1. evaporation

allow evaporate(s) / evaporating

1

2. condensation

allow condense(s) / condensing

1

3. precipitation

allow rain(ing) / rainfall
allow named precipitation
ignore precipitates

1

4. draining / drainage

allow run-off / percolation / infiltration
allow groundwater / underground flow

1

5. transpiration

1

(c) $6\,000\,000\,000 \times \frac{4.5}{100}$

allow 6 000 000 000 × 0.045

1

270 000 000

1

2.7×10^8

allow an incorrectly calculated number of people given in correct standard form

1

(d) climate change has increased the area of deserts

1

more water is used to grow crops

1

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(e) decay / decomposition of leaves

allow leaves are broken down

1

respiration (by microorganisms / decomposers)

ignore aerobic / anaerobic

ignore respiration by worms / detritivores / insects / leaves

1

respiration releases carbon dioxide

or

microorganisms release carbon dioxide

1

carbon dioxide is used in photosynthesis (for new plant growth)

*do **not** accept carbon dioxide absorbed in the roots*

1

(f) nitrates are released into the soil

1

[16]

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Q2.

(a) methane

*allow CH_4 **or** water (vapour) or H_2O*

allow correct example such as CFCs, nitrous oxide, ozone

1

(b)

ignore references to increased temperature and greenhouse gas / effect

any **two** from:

- ice caps melting
- rise in sea levels
- desertification
- extreme weather

allow storms or droughts or flooding

- change in species distribution
- change in migration patterns
- loss of biodiversity

allow some species become extinct / endangered

- coral bleaching
- crop failure **or** food insecurity
- loss of habitat qualified

allow correct examples such as polar bears losing ice

ignore forest fires

2

(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

Photosynthesis

- (carbon dioxide is) taken in through stomata / leaves
- (carbon dioxide is) used in photosynthesis
- to make glucose / carbohydrate
- (glucose used) to make other carbon compounds or named example such as proteins, lipids
- (glucose) stored as starch

Feeding

- plants are eaten / consumed by animals
- which use the carbon compounds to make other carbon compounds

Decay

- when plants / animals die they are decomposed / decayed
- by microorganisms
- which use the carbon compounds to make other carbon compounds

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Respiration
- plants / animals / microorganisms respire
- (respiration) releases carbon dioxide back into the atmosphere

Level 2 answers must consider photosynthesis and at least one other process in the carbon cycle.
Level 2 answers must include some accurate detail.

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