

Name of the Student: _____

Max. Marks : 23 Marks

Time : 23 Minutes

Mark Schemes

Q1.

- (a) microorganisms / bacteria / fungi

allow correct named organisms

allow detritus feeders / decomposers / worms

1

break down / digest / feed on (dead organisms)

accept use carbohydrates / glucose

allow decomposes

ignore decay / rot

1

(and release carbon dioxide when they) respire

*do **not** allow respiration if linked to leaves / dead organisms*

1

- (b) any **two** from:

- the higher the temperature the faster the rate of decay
allow faster / more carbon dioxide for faster rate of decay
- the higher the oxygen concentration the faster the rate of decay
allow faster / more carbon dioxide for faster rate of decay
- the rate increases faster (with increasing oxygen concentration) at 20 °C (than 15 °C)

2

[5]

Q2.

any **six** from:

*only credit release of carbon dioxide **once** when linked to a correct process*

ignore references to burning

- (plants) photosynthesise
- (plants) take in carbon dioxide
- (plants) produce carbohydrates / fats / proteins
 - accept produce glucose*
- (carbon compounds transferred by) feeding
- respiration
- breaks down carbon compounds / carbohydrates
 - accept glucose*
- releases carbon dioxide
- organisms die / produce wastes / excrete
- (which are) decomposed / decayed by microorganisms
 - allow broken down*
 - allow bacteria / fungi / microbes / decomposers*
- (which) release carbon dioxide

[6]

Q3.

plants absorb CO₂ for photosynthesis

ignore carbon

1

all organisms / any named organism respire(s) and release(s) CO₂

ignore breathing

ignore carbon

1

any **four** from:

- carbon compounds / named compound made by plants
- plants eaten by animals
- dead organisms / faeces are decomposed / decayed
allow broken down
- by bacteria / microorganisms
- dead plants and animals (may) form fossil fuels
- when (fossil) fuels are burnt they release CO₂ into the air

4

[6]

Q4.

read 'the gas' or 'it' as carbon dioxide

(plants) photosynthesise

1

(plants) absorb carbon dioxide / CO₂ (from the air)

allow take in / use carbon dioxide / CO₂ (from the air)

1

(overall) more carbon dioxide / CO₂ is being released into the air than is being removed

*allow 470 (billion tonnes) released **but / and** 450 (billion tonnes) taken in*

1

(by) respiration (by all organisms / any named organism)

ignore breathing

ignore carbon

1

(and) combustion / burning

ignore carbon

1

(so) amount of carbon dioxide / CO₂ in air is increasing

allow 20 (billion tonnes) of carbon dioxide / CO₂ added to air each year

1

[6]