

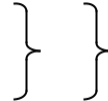
Global Warming MS

QUESTION 1

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	3.2	award both marks for correct answer irrespective of working if answer incorrect (55 + 55 + 1.2 + 5) - (110 + 3) or 116.2 - 113 or (55 + 55 + 1.2 + 5 + 90) - (110 + 93) gains 1 mark	2
b)	any one from: ✗ less carbon dioxide taken in by trees ✗ less photosynthesis ✗ burning trees releases carbon dioxide ✗ decay releases carbon dioxide	ignore carbon dioxide released by trees or trees store carbon dioxide	1
c)	heat / infra red / radiation / energy radiated by Earth carbon dioxide absorbs / traps / radiates	must be in correct context ignore light do not accept reflection allow reflects ignore absorbs radiation / heat / light from Sun ignore ozone	1 1 1
Total marks			6

QUESTION 2

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	any five from: •methane produced •by cattle •by rice •(more) greenhouse gas •CO 2 from tractors / machinery / food transport / fertiliser production •deforestation releases CO 2 •via decomposition / burning / less photosynthesis / reduced	must be linked to methane ignore CO2 from animals	5



	carbon sink •absorbs / reflects energy radiated from earth •energy / heat re-radiated back to earth		
b)	variation / mutation individuals with characteristics most suited to environment survive genes passed to next generation or these individuals reproduce		1 1 1
Total marks			8

QUESTION 3

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	any one from eg: ⊖shorter distance between samples ⊖sample to greater height ⊖specify the size of each site	ignore repeat investigation / measurements ignore longer transect	1
b)i)	Parmelia		1
b)ii)	Evernia		1
c)	any two from: • Lecanora does not extend over whole range of transect / does not grow everywhere /does not grow in town centre / does not grow in countryside • Lecanora grows in a range of sulfur dioxide concentrations or Lecanora only grows in limited range of sulfur dioxide concentrations or Lecanora lives over large range of sulfur dioxide concentrations • other factors eg different pollutant might also influence growth of Lecanora • sulfur dioxide / pollutant concentration was not measured • amount of Lecanora not measured	ignore Lecanora does not give accurate measure of sulfur dioxide concentration	2
Total marks			5

QUESTION 4

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	methane		1
b)	fertiliser		1
c)	fuel		1
d)	the greenhouse effect		1
Total marks			4

QUESTION 5

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	kills / gets rid of / reduces methane bacteria	allow kills / gets rid of / reduces bad bacteria ignore acts like antibiotic	1 1
a)ii)	less food converted to methane more growth / meat / muscle / milk produced / more profit / fatter animals	allow can keep more cattle without further environmental damage ignore energy ignore references to bacteria and disease	1
b)	absorbs energy / heat radiated by Earth some energy / heat reradiated leading to global warming / enhanced greenhouse effect	allow absorbs / traps energy / heat / from Earth do not allow absorbs energy / heat from Sun ignore reflected do not allow reradiates energy / heat from Sun accept effects of global warming eg melting ice caps accept methane is a greenhouse gas ignore references to ozone	1 1 1
Total marks			6

QUESTION 6

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	carbon dioxide absorbs / traps / re-radiates / insulates energy / heat / radiation	allow reflects do not allow this mark if energy / heat / direct from sun ignore ozone	1 1
a)ii)	global warming / melting	allow primary effects only	1

	icecaps /climate change / rise in sea levels /flooding	allow temperature change	
b)i)	customers concerned with the environment / green issues (will be attracted) owtte	allow idea of helping the world	1
b)ii)	reduces transport of food less carbon dioxide / greenhouse gas / emissions / harmful gases / lower carbon footprint (from transport)	allow less fuel used ignore pollution unqualified	1 1
Total marks			6

QUESTION 7

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	any three from: ✘ greenhouse gas ✘ causes global warming / changes weather patterns ✘ absorbs energy / infrared light / heat (radiated) from Earth ✘ re-radiates (some) of this energy	ignore references to ozone layer accept absorbs radiation from Earth do not accept absorbs energy from Sun / sunlight allow reflects energy back to Earth	3
Total marks			3