

- M1.** (a)  $(140 + 240 + 380 + 450 = )$  1210 1
- (b) the local people decided to farm cattle 1
- a company starts growing plants for biofuels 1
- (c) carbon dioxide  
*in this order only* 1
- photosynthesis 1
- (d) animals and birds migrate because there is less food 1
- more habitats are destroyed 1
- (e) any **one** from:  
• breeding programmes (for endangered species)  
• regeneration (programmes)  
• reintroduction of field margins / hedgerows  
• awareness raising with politicians / public  
• recycling 1

[8]

- M2.** (a) fuel / houses / paper  
*allow any object made from wood* 1
- farming / agriculture / replanting  
*allow roads / homes / factories* 1
- carbon dioxide / greenhouse gas / pollution **or** relative named pollutant 1
- warming / temperature increase 1
- (b) (i) none of species left / died out 1
- (ii) may have products useful to humans / examples  
*allow preserve for future generations **or** 'still there to look at'*  
*allow affect food chains / cycles **or** extinction of other species*  
*allow non human reasons eg loss of habitat*  
*ignore environmental effects* 1

[6]

<b>M3.</b>	(a)	(i)	40 <i>accept -40 or +40</i>	1
		(ii)	<b>Step 1</b> 92	1
			<b>Step 2</b> 18	1
			<b>Step 3</b> 74 <i>correct subtraction of answer in <b>step 2</b> from answer in <b>step 1</b> gains 1 mark</i> <i>correct answer 74 with no working gains 3 marks</i> <i>ignore sign</i>	1
	(b)	(i)	both animals and plants	1
		(ii)	microorganisms	1
		(iii)	carbon dioxide	1

[7]

- M4.** (a) warmer / dryer  
*allow greenhouse effect / global warming*  
*ignore wind* 1
- (b) (i) genes / alleles / chromosomes / DNA / genetic material / genetics  
*allow inheritance*  
*allow nutrition / food / metabolism / growth rate*  
*ignore environment* 1
- (ii) natural selection / evolution  
*allow survival of the fittest* 1

[3]

- M5.** (a) (i) carbon dioxide 1
- (ii) sulfur dioxide 1
- (b) (i) reduces land available for animals and plants 1
- (ii) metals 1
- (c) (i) pesticide 1
- (ii) kill other animals 1

**[6]**

- M6.** (a) any **one** from:
- increased pollution
  - dumping waste
- allow described consequence e.g. vermin*  
*accept (increased) landfill*  
*accept (increased) fly tipping.*
- 1
- 
- (b) (i) (mass of SO<sub>2</sub>) decreases
- 1
- and then levels off / plateaus
- 1
- 
- (ii) 2008
- clear evidence of calculating 700 (000) = 1 mark*
- 2
- 
- (iii) any **one** from:
- acid rain
  - erosion of statues / buildings
  - destruction of habitats
  - reduction in biodiversity
  - damage to lichen
  - breathing problems
- ignore reference to ozone layer*  
*allow damage to plants.*
- 1
- 
- (c) Carbon dioxide being absorbed in oceans and lakes
- 1
- Photosynthesis by trees
- 1

[8]

**M7.** (a) 60

*correct answer gains 2 marks*

*if answer incorrect evidence of using 40 gains 1 mark*

2

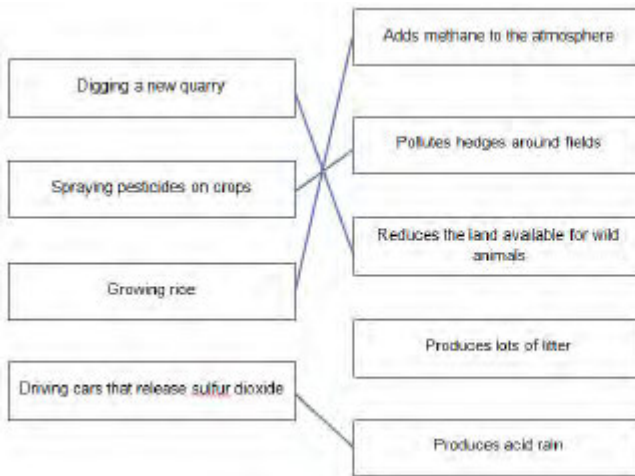
(b) any **two** from

*ignore temperature rise / global warming*

- climate change / described e.g. hotter summers / drought / seasons change
- rise in sea levels / flooding  
*allow other environmental effects*
- glacier melting / ice caps melting
- forest fires
- habitat destruction
- effect on organisms
- eg extinction / migration

2

[4]



1 mark for each correct line

extra line from box in left hand column cancels mark

M8.(a)

4

(b) any **two** from:

- climate change  
*ignore 'Earth warmer'*
- more extreme weather / changes to weather (patterns) / described
- rise in sea level
- melting of ice caps
- reduced biodiversity
- changes to migration patterns
- changes in distribution of species  
*accept faster plant growth / tropical species can be grown in UK*  
*accept tropical diseases / example spread to temperate regions*

2

[6]



**M9.** (a) genes 1

chromosomes 1

(b) (i) higher yield 1

less use of pesticides 1

(ii) any **two** from:

- uncertain about effects on health
- fewer bees
- might breed with wild plant
- seeds only from one manufacturer

2

**[6]**