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]

M3. (a) (i) 40

accept -40 or +40

1

(ii) **Step 1** 92

1

Step 2 18

1

Step 3 74

*correct subtraction of answer in **step 2** from answer in **step 1** gains **1** mark*

*correct answer 74 with no working gains **3** marks*

ignore sign

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 <u>rate</u>

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_2) 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

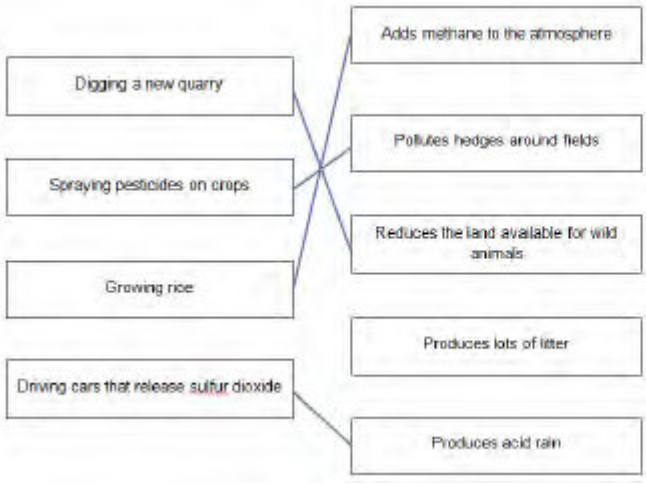
ignore temperature rise / global warming

- 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]

M8.(a)



1 mark for each correct line

extra line from box in left hand column cancels mark

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]