**Questions**

**Q1.**

Which of the following best defines the meaning of the term **anthropogenic** change?

It is a change caused by

   **A**      nature.

   **B**      plants.

   **C**      animals.

   **D**      humans.

**(Total for question = 1 mark)**

**Q2.**The principal reason why scientists have recommended that chlorofluorocarbons (CFCs) are not used in aerosols is that they cause

   **A**    global warming.

   **B**    acid rain.

   **C**    ozone depletion.

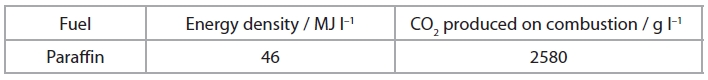
   **D**    water pollution.

**(Total for Question = 1 mark)**

**Q3.**

One definition of the term 'carbon footprint' is

'the amount of carbon dioxide produced when a fuel is burned.'



Given the information above, what is the carbon footprint for paraffin in terms of grams of CO2 produced per MJ of energy?

   **A**    46

   **B**    56.09

   **C**    2580

   **D**    118 680

**(Total for question = 1 mark)**

**Q4.**Which of the following would **not** be used to assess whether the use of a biofuel produced from a crop of sugar cane is carbon neutral?

The amount of

   **A**    fuel used to operate farm machinery.

   **B**    pesticides and fertilisers used.

   **C**    energy released per tonne of biofuel.

   **D**    fuel used to process the crop.

**(Total for Question = 1 mark)**

**Q5.**

      Which of the following is **not** true? Chlorofluorocarbons, CFCs,

   **A**       are flammable.

   **B**       are greenhouse gases.

   **C**       damage the ozone layer.

   **D**       are excellent refrigerants.

**(Total for question = 1 mark)**

**Q6.**

Which of the following statements is true?

   **A**      CFCs and nitrogen monoxide, NO, are involved in the depletion of the ozone layer.

   **B**      CFCs act as catalysts for the depletion of the ozone layer, while nitrogen monoxide, NO, does not.

   **C**      CFCs and ozone are free radicals.

   **D**      CFCs and nitrogen monoxide, NO, are decomposed by UV radiation.

**(Total for question = 1 mark)**

**Q7.**It is important to lower the level of carbon dioxide in the atmosphere because of concerns over which environmental problem?

   **A**    Acid rain

   **B**    Global warming

   **C**    Non-biodegradability

   **D**    Ozone depletion

**(Total for Question = 1 mark)**

**Q8.**

Which of the following is a pure form of carbon that has both hexagonal and pentagonal rings in its structure and can conduct electricity?

   **A**    Charcoal

   **B**    Buckminsterfullerene

   **C**    Diamond

   **D**    Graphite

**(Total for question = 1 mark)**

**Q9.**A 'greener' chemical process will be one that

   **A**    uses energy less efficiently.

   **B**    forms a non-polluting waste product.

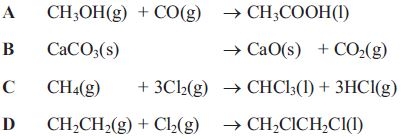
   **C**    produces significant amounts of waste.

   **D**    makes use of non-renewable resources.

**(Total for Question = 1 mark)**

**Q10.**

The following reactions have been used in the chemical industry to make liquid and solid products, allowing any gaseous products to escape into the atmosphere:



(a) Which reaction has an atom economy by mass of 56%?

**(1)**

   **A**

   **B**

   **C**

   **D**

(b) Which reaction causes the most immediate damage to the environment?

**(1)**

   **A**

   **B**

   **C**

   **D**

(c) Which reaction is an electrophilic addition?

**(1)**

   **A**

   **B**

   **C**

   **D**

**(Total for Question = 3 mark)**

**Q11.**

The use of poly(ethene) packaging has been criticised mainly because

   **A**     the complete combustion of poly(ethene) produces dangerous fumes.

   **B**     large amounts of oil are consumed in producing the monomer, ethene.

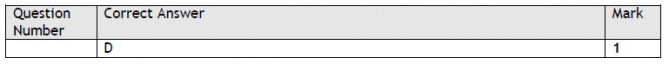
   **C**     poly(ethene) degrades to form toxic products.

   **D**     the catalyst used in the polymerization of ethene is expensive.

**(Total for question = 1 mark)**

**Mark Scheme**

**Q1.**



**Q2.**



**Q3.**



**Q4.**



**Q5.**



**Q6.**



**Q7.**



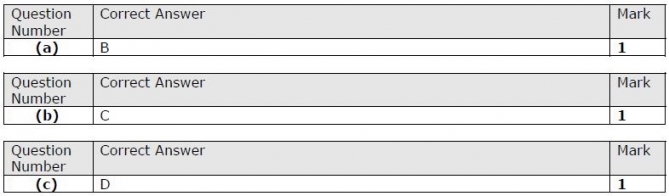
**Q8.**



**Q9.**



**Q10.**



**Q11.**

