Chemistry

1

A

1% noble gases and carbon

B

i)When carbon fossil fuels burn in a limited supply of oxygen or incomplete combustion.

ii) They block and infect respiratory organs and cause cancer.

C

i)Power stations in the industrial areas are a source of sulfur dioxide when sulfur compounds in fossil fuels are burnt.

ii)Sulphur dioxide dissolves in rain to form acid rains which attacks stonework in buildings, and it harms the environment as it acidifies water sources.

iii)To burn fewer fossil fuels or at least the ones containing sulfur compounds, and or flue gas desulfurization which treats the waste gases with calcium oxide to give calcium sulphate.

2

a) Because it can’t be easily polluted by the polluting factors since rivers go through farms and living areas which will lead to polluting the water.

b)

i) filtration

ii) undissolved insoluble particles

C

i)arsenic and lead

ii) It removes toxic metals and ions and chemicals which removes the bad smell and taste

D)

i)Microbes must be killed because the river water is going to be used to supply the people living around it and if there are microbes in it, it might lead to diseases.

ii)Chlorine

E) Magnesium carbonate can be found which helps the heart and prevent heart disease and calcium which helps the human’s bone tissues to synthesize.

3

a)

i)White to blue

ii)Blue to red

B)

i)By checking the boiling point and if it is not 100 degrees Celsius on point then it is not pure.

ii)100°C

C) Because distilled water can be used to give more accurate results and there are no more impurities to affect the results.

4)

a) The amount of crop in a certain amount of farmland area.

b)NPK fertilizer

c)

i)Calcium phosphate

ii)Calcium is needed by the plant.

d)

i)Ammonium nitrate

ii)Nitrogen

e)

i)Rain might wash off the fertilizer to the river causing them to be harmful.

ii)Phosphorus

iii)It increases aquatic plant growth, which take up too much oxygen and leads to eutrophication which decreases the amount of dissolved water.

iv)Decreases aquatic life and kills them.

7

a)Greenhouse gases

b) 1: sunlight or UV rays sent to earth

2: heat is absorbed by greenhouse gases.

3: some heat escapes the atmosphere

C)

i)The amount of thermal energy absorbed will be more than the amount of thermal energy that escapes the atmosphere.

ii)The earth’s average temperature increases.

8)

a)

i)Carbon monoxide can kill humans because its poisonous, it replaces oxygen in the body so disables breathing.

ii)Nitrogen dioxide can cause respiratory problems in the human body.

b)When there is a catalyst to speed up the reaction

c) Catalytic equation for nitrogen monoxide and carbon monoxide to form carbon and nitrogen dioxide:

2CO(g) + 2NO(g) 🡪2CO2(g) + N2(g)