O Level Pure Chemistry MCQs

Atmosphere Test 2.0

Q1

A catalytic converter in a car exhaust system changes pollutants into less harmful products. Which change does not occur in a catalytic converter?

A carbon dioxide → carbon
B carbon monoxide → carbon dioxide
C oxides of nitrogen → nitrogen
D unburnt hydrocarbon →> carbon dioxide and water

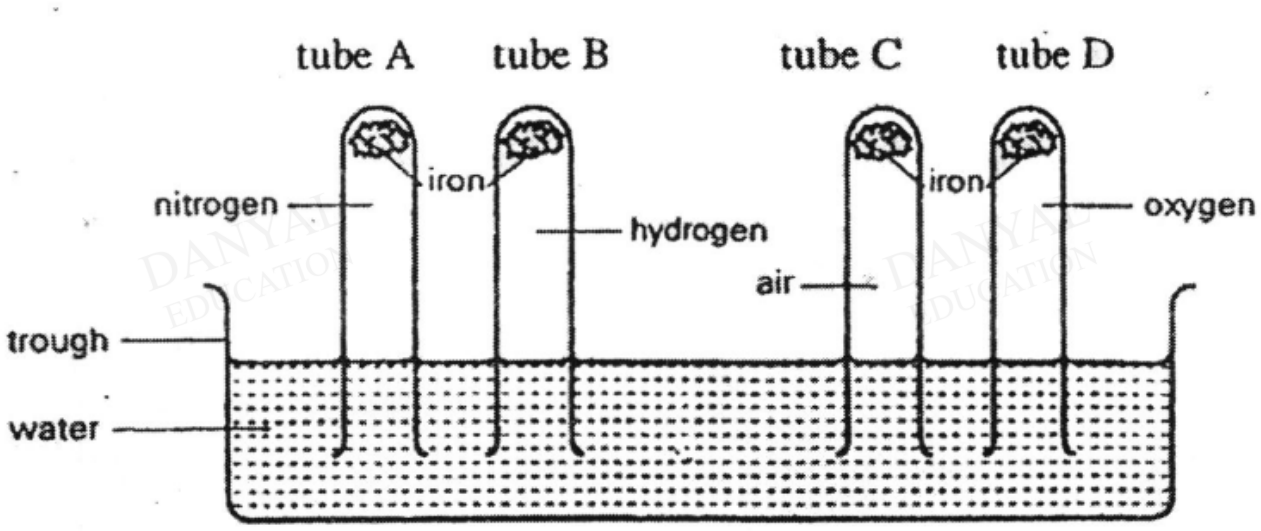
Q2

Which substances can be used to reduce atmospheric pollution caused by flue gases?

A calcium carbonate and calcium oxide
B ammonium sulfate and calcium carbonate
C calcium oxide and ammonium sulfate
D ammonium carbonate and ammonium sulfate

Q3

The experiment shown in the diagram was set up.
Which tube shows the highest increase in water level after a month?



Q4

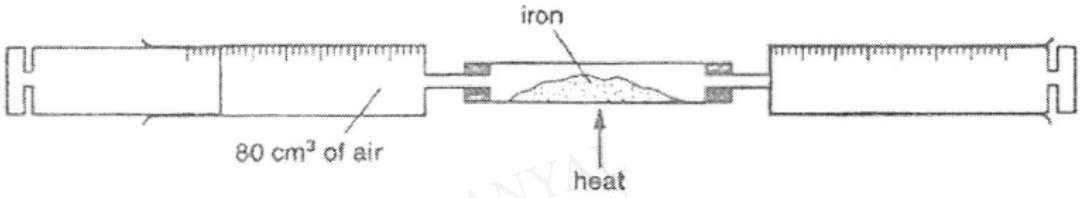
To reduce atmospheric pollution, the waste gases from a coal-burning power station are 'scrubbed' by passing them through a calcium compound.

Which calcium compound cannot be used?

A calcium carbonate
B calcium hydroxide
C calcium oxide
D calcium sulfate

Q5

An 80 cm^3 sample of air is trapped in a syringe. The air is slowly passed over heated iron in a tube until there is no further decrease in volume.
When cooled to the original temperature, which volume of gas remains?



A 16 cm^3
B 24 cm^3
C 63 cm^3
D 80 cm^3

Q6

Which one of the following chemical equations shows the removal of one or more exhaust gases in a catalytic converter?

A $2CO + 2NO \rightarrow 2CO_2 + N_2$
B $2CO + SO_2 \rightarrow 2CO_2 + S$
C $2SO_2 + O_2 \rightarrow 2SO_3$
D $N_2 + 2O_2 \rightarrow 2NO_2$

Q7

Which of the following does **not** take place in the catalytic converter?

A Carbon monoxide is oxidised to carbon dioxide
B Oxides of nitrogen are reduced to nitrogen.
C Unburnt hydrocarbons are oxidised to carbon dioxide and water.
D Water vapour is reduced to hydrogen.

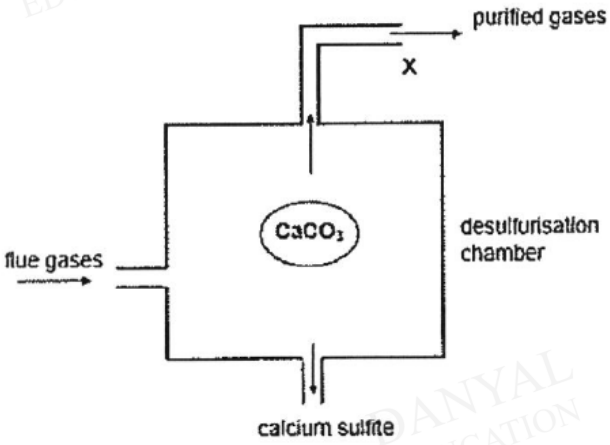
Q8

The following data gives the concentration in parts per billion parts of air, in four industralised cities.
In which city would limestone buildings be under the greatest threat from pollution?

city	carbon monoxide	nitrogen dioxides	ozone
A	0.01	45	21
B	0.03	17	23
C	0.20	38	11
D	3.00	32	30

Q9

The diagram below shows a simplified process of desulfurisation.

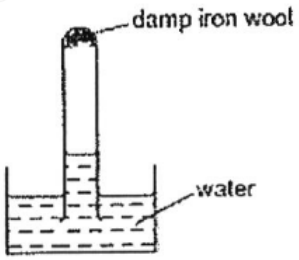


Which of the observation at outlet **X** best describes the nature of the gases exiting?

A The gases turned moist red litmus paper blue.
B The gases turned acidified potassium manganate(VII) purple.
C The gases turned acidified potassium iodide brown.
D The gases formed a white precipitate in limewater.

Q10

A test-tube containing damp iron wool is inverted in water.
After three days, the water level inside the test-tube has risen.



Which statement explains this rise?

A Iron has been reduced.
B Oxygen has been formed.
C Oxides of iron have been formed.
D The temperature of the water has risen.

Answers

Atmosphere Test 2.0

Q1 A

Q2 A

Q3 D

Q4 D

Q5 C

Q6 A

Q7 D

Q8 A

Q9 D

Q10 C