

O Level Pure Chemistry MCQs

Ammonia Test 1.0

Q1

Which statement about the manufacture of ammonia via the Haber Process is **not** correct?

- A A high pressure will increase the yield of ammonia.
- B A high temperature will increase the yield of ammonia.
- C An iron catalyst is used to speed up the rate of reaction.
- D It is a redox reaction.

Q2

Ammonia is produced industrially by Haber process.

Which of the following statement is **not** true about the Haber process?

- A Nitrogen is obtained from air.
- B High temperature is applied to overcome the activation energy.
- C A catalyst is added to decrease the enthalpy change of the forward reaction.
- D High pressure is applied to increase the yield of ammonia.

Q3

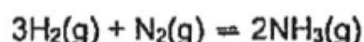


The equation above represents a certain type of chemical reaction. Which of the following is true regarding this reaction?

- A The reaction produces heat and light when C and D are formed.
- B As C and D are formed, they will react to produce A and B.
- C A and B require a large amount of activation energy to produce C and D.
- D The rate of reaction to give C and D will be very slow.

Q4

Nitrogen and hydrogen react according to the following equation in the Haber Process:



A high yield is favoured by conditions of high pressure and low temperature. However, in actual practice, a high temperature of 450 °C is used because

- A at high temperatures, gases expand to produce greater yield.
- B at high temperatures, the catalyst is more effective.
- C at low temperatures, liquid ammonia is collected instead.
- D at low temperatures, the rate of reaction is too slow.

Q5

Ammonia gas is produced industrially by the Haber process.

Which of the following statements is not true with regard to the Haber process?

- A Nitrogen is obtained from the air.
- B A catalyst is added to increase the yield of ammonia.
- C High pressure is applied to increase the yield of ammonia.
- D High temperature is applied to overcome the activation energy.

Q6

Which of the following statements concerning the Haber process is incorrect?

- A A catalyst of finely divided iron is used.
- B Nitrogen and hydrogen are fed into the reactor in the volume ratio of 1:3.
- C The cost of high pressure technology means that the reaction is carried out at the more economical pressure of 4 atm.
- D The equilibrium yield of ammonia is favoured by the use of low temperatures, although temperatures of around 450 °C are actually used.

Q7

In the Haber process, nitrogen and hydrogen react to form ammonia.

Which is the main source of hydrogen?

- A air
- B crude oil
- C ethanoic acid
- D ethanol

Q8

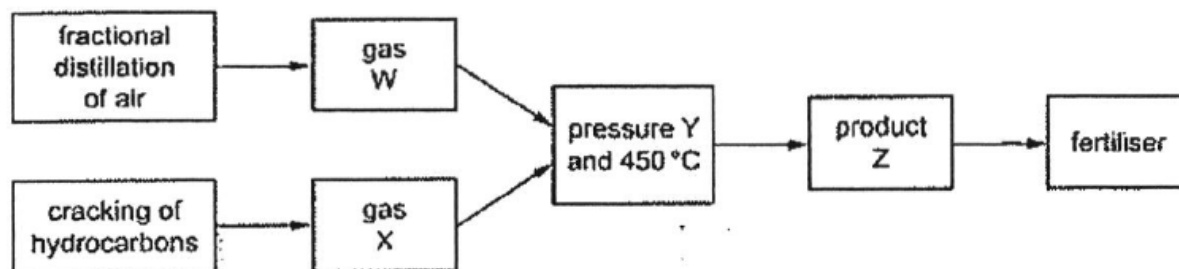
In the Haber process, nitrogen and hydrogen react to form ammonia.

What is the source of hydrogen?

- A air
- B limestone
- C crude oil
- D sulfuric acid

Q9

The diagram shows a flow chart for the manufacture of fertiliser.



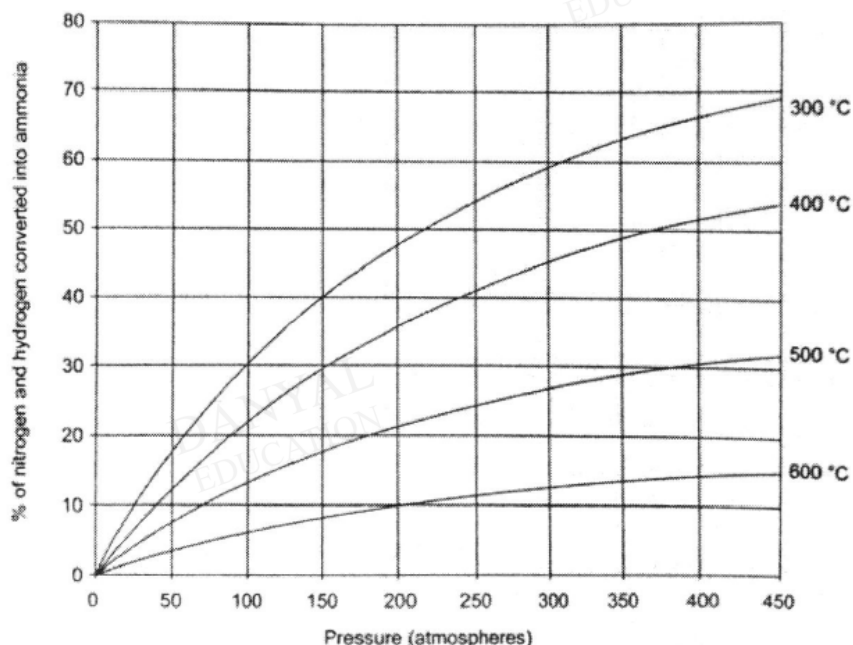
What are the possible identities of W, X, Y and Z?

	W	X	Y	Z
A	H ₂	N ₂	high	NH ₃
B	O ₂	SO ₂	high	SO ₃
C	O ₂	SO ₂	low	SO ₃
D	N ₂	H ₂	high	NH ₃

Q10

The graph below gives the percentage conversion of nitrogen and hydrogen under different conditions.

The equation for the reaction is given as: $\text{N}_2 + 3\text{H}_2 \rightleftharpoons 2\text{NH}_3$ $\Delta H = -92\text{kJ}$



Which of the following statements is correct?

- A The yield of ammonia increases with increasing pressure.
- B Finely divided nickel is used to catalyse the reaction.
- C The yield of ammonia increases with increasing temperature.
- D The forward reaction for production of ammonia is an endothermic process.

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Answers

Ammonia Test 1.0

- Q1 B
- Q2 C
- Q3 B
- Q4 D
- Q5 B
- Q6 C
- Q7 B
- Q8 C
- Q9 D
- Q10 A

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