AMMONIA
Assignment Sheet

1. What are the products formed when ammonia is oxidized with copper oxide? **[2001]**

2. What is the difference between the chemical nature of an aqueous solution of hydrogen chloride and an aqueous solution of ammonia? **[2001]**

3. From the following gases - ammonia, chlorine, hydrogen chloride, sulphur dioxide, select the gas that matches the description given :
   (i) The gas [B] turns moist red litmus paper blue.
   (ii) Write the equation for the reactions that takes place when gas [B] is passed over heated CuO. **[2002]**

4. (a) Write the equation for the formation of ammonia by the action of water on magnesium nitride.
   (b) How is ammonia collected?
   (c) Why is ammonia not collected over water?
   (d) Which compound is normally used as a drying agent for ammonia? **[2003]**

5. (a) Write the equation for the reaction in the Haber's process that forms ammonia.
   (b) State the purpose of liquefying the ammonia produced in the process. **[2004]**

6. (a) (i) Which feature of ammonia molecule leads to the formation of the ammonium when ammonia dissolves in water?
   (ii) Name the other ion formed when ammonia dissolves in water.
   (iii) Give one test that can be used to detect the presence of the ion produced in (ii).
   (b) Write the equations for the following reactions which result in the formation of ammonia :
   (i) A mixture of ammonium chloride and slaked lime is heated.
   (ii) Aluminium nitride and water. **[2005]**

7. (a) Name the substance used for drying ammonia.
   (b) Write an equation to illustrate the reducing nature of ammonia.
   (c) With reference to Haber's process for the preparation of ammonia, write the equation and the conditions required. **[2006]**

8. (a) (i) Of two gases, ammonia and hydrogen chloride, which is more dense? Name the method of collection of the gas.
   (ii) Give one example of a reaction between the above two gases which produces a solid compound.
   (b) Write a balanced equation for a reaction in which ammonia is oxidized by :
   (i) a metal oxide.
   (ii) a gas which is not oxygen. **[2007]**

9. Ammonia can be obtained adding water to: [select the correct word]
A: Ammonium chloride B: Ammonium nitrite
C: Magnesium nitride D: Magnesium nitrate **[2008]**

10. Name: An alkaline gas 'A' which gives dense white fumes with hydrogen chloride. **[2008]**

11. Write the equation for tne following reaction: Aluminium nitride and water. **[2008]**

12. Copy and complete the following table relating to an important industrial process. Output refers to the product of the process not the intermediate steps. **[2008]**

Name of process	Inputs	Catalyst	Equation for catalyzed reaction	Output
Haber process	Hydrogen +			

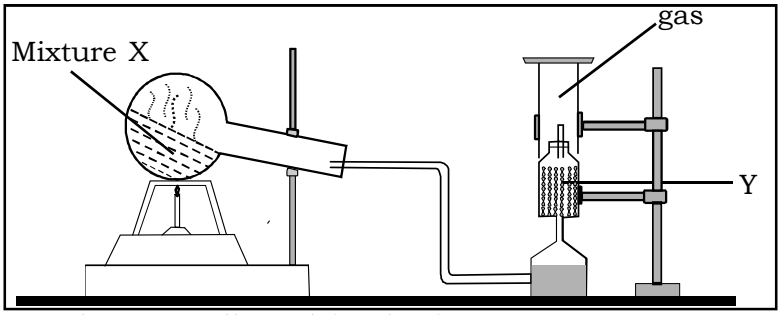
13. Name the gas - that burns in oxygen with a green flame. **[2009]**

14. Write a fully balanced equation for - Magnesium nitride is treated with warm water. **[2009]**

15. Identify the substance 'Q' based on the information given - The white crystalline solid 'Q' is soluble in water. It liberates a pungent smelling gas when heated with sodium hydroxide solution. **[2009]**

16. The questions below are related to the manufacture of ammonia.
(i) Name the process.
(ii) In what ratio must the reactants be taken ?
(iii) Name the catalyst used.
(iv) Give the equation for the manufacture of ammonia.
(v) Ammonia can act as a reducing agent. Write a relevant equation for such a reaction. **[2010]**

17. The diagram shows an experimental set-up for the laboratory preparation of a pungent smelling gas. The gas is alkaline in nature.



(i) Name the gas collected in the jar.
(ii) Write the balanced equation for the above preparation.
(iii) How is the gas being collected ?
(iv) Name the drying agent used.
(v) How will you find that the jar is full of pungent gas ? **[2011]**

18. Name - The gas produced when excess ammonia reacts with chlorine. **[2012]**

19. Rewrite the correct statement with the missing word/s: Magnesium nitride reacts with water to liberate ammonia. **[2012]**

20. Give balanced equation for the reaction: Ammonia & oxygen in the presence of a catalyst. **[2012]**

21. The following questions are based on the preparation of ammonia gas in the laboratory:
(i) Explain why ammonium nitrate is not used in the preparation of ammonia.
(ii) Name the compound normally used as a drying agent during the process.
(iii) How is ammonia gas collected. Explain why it is not collected over water. **[2012]**

22. State one appropriate observation for each of the following: **[2013]**
Excess of chlorine gas is reacted with ammonia gas.

23. Nitrogen gas can be obtained by heating: **[2013]**
(A) Ammonium nitrate (B) Ammonium nitrite.
(C) Magnesium nitride (D) Ammonium chloride.

24. Give balanced equations. **[2013]**
Reduction of hot Copper(II) oxide to copper using ammonia gas.

25. Fill in the blanks from the choices given within brackets
Ammonia gas is collected by ..... (an upward displacement of air, a downward displacement of water, a downward displacement of air) **[2014]**

26. Give balanced chemical equations for each of the following:
(i) Lab preparation of ammonia using an ammonium salt
(ii) Reaction of ammonia with excess chlorine.
(iii) Reaction of ammonia with sulphuric acid. **[2015]**

27. Write balanced chemical equations for each of the following:
(i) Action of warm water on AlN.
(ii) When excess of ammonia is treated with chlorine.
(iii) An equation to illustrate the reducing nature of ammonia. **[2016]**

28. Name the gas evolved when the following mixtures are heated:
(i) Calcium hydroxide and Ammonium Chloride
(ii) Sodium Nitrite and Ammonium Chloride **[2016]**

29. Write a balanced chemical equation for each of the following:
(i) Reaction of Ammonia with heated copper oxide.
(ii) Catalytic oxidation of Ammonia.
(iii) Reaction of Ammonia with Nitric acid.
(iv) Laboratory preparation of ammonia from ammonium chloride. **[2017]**

30. State one relevant observation for each of the following reactions :
(i) Burning of ammonia in air. **[2017]**

31. Certain blank spaces are left in the following table and these are labelled as A, B, C, D and E. Identify each of them. **[2017]**

Lab Preparation of	Reactants used	Products formed	Drying agent collection	Method
NH_3gas	C _____	$Mg(OH)_2$ NH_3	D _____	E _____

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