

ST. MARY'S HIGH SCHOOL, NEW COOCHBEHAR

3rd UNIT TEST -2021-2022

CLASS- X

SUBJECT - CHEMISTRY

F.M.-30

SECTION-A [10 MARKS]

(Attempt all questions)

Question 1

Choose the correct answers to these questions from the given options. (Do not copy the question, write the correct answer only.) [10]

- (i) Ammonia gets catalytically oxidized to give:
(a) $N_2 + H_2O$ (b) $NO_2 + H_2O$ (c) $NO + H_2O$ (d) Cu
- (ii) The drying agent used in the laboratory during the preparation of dry HCl gas is:
(a) Phosphorus pentoxide (b) Anhydrous calcium sulphate (c) Calcium oxide (d) Conc. sulphuric acid
- (iii) When dilute sulphuric acid reacts with iron sulphide, the gas evolved is:
(a) Hydrogen sulphide (b) Sulphur dioxide (c) Sulphur trioxide (d) Vapours of sulphuric acid
- (iv) The aim of fountain experiment is to prove:
(a) HCl turns blue litmus red (b) HCl fumes in moist air
(c) HCl is denser than air (d) HCl is highly soluble in water
- (v) In laboratory nitric acid is prepared by heating:
(a) Potassium nitrate and dil. H_2SO_4 (b) Potassium nitrate and conc. H_2SO_4
(c) Potassium nitrate and dil. HCl (d) Potassium nitrate and conc. HCl
- (vi) The catalyst preferred in the conversion of Sulphur dioxide to Sulphur trioxide is:
(a) Finely divided iron (b) Graphite (c) Vanadium pentoxide (d) Platinum
- (vii) Dilute sulphuric acid can be distinguished from dilute nitric acid using:
(a) Dil. hydrochloric acid (b) Sodium hydroxide (c) Barium chloride solution (d) Lead sulphate
- (viii) When dilute HCl is mixed with clear solution of silver nitrate, a precipitate is formed which is:
(a) Yellow in colour (b) White in colour (c) Silvery in colour (d) Blue in colour
- (ix) In laboratory, hydrogen chloride gas is prepared by heating conc. H_2SO_4 with:
(a) Sodium chloride (b) Potassium chloride (c) Magnesium chloride (d) Ammonium chloride
- (x) An alkaline solution which gives dense white fumes with HCl gas is:
(a) Sodium hydroxide (b) Ammonium hydroxide solution
(c) Potassium hydroxide solution (d) Calcium hydroxide solution

SECTION-B [20 MARKS]
(Attempt all questions)

Question 2

- (a) Write a balanced chemical equation for each of the following: [4]
- (i) Action of hydrochloric acid on sodium bicarbonate.
 - (ii) Dilute nitric acid and copper.
 - (iii) Oxidation of carbon with concentrated nitric acid.
 - (iv) When excess ammonia is treated with chlorine.
- (b) State the observation for the following, when: [4]
- (i) Ammonia gas is burnt in an atmosphere of oxygen in the absence of a catalyst.
 - (ii) Ammonia is passed over heated copper oxide.
 - (iii) Dilute hydrochloric acid is added to lead nitrate solution.
 - (iv) Concentrated sulphuric acid is added to sugar crystals.
- (c) The question below are related to the manufacture of ammonia. [2]
- (i) Name the process.
 - (ii) Name the catalyst used.

Question 3

- (a) The following questions are based on the preparation of ammonia gas in the laboratory: [4]
- (i) Name the compound normally used as a drying agent during the process.
 - (ii) Explain why ammonium nitrate is not used in the preparation of ammonia.
 - (iii) How is ammonia gas collected. Explain why it is not collected over water.
- (b) Name the gas that is produced in the following cases: [2]
- (i) Sulphur is oxidized by concentrated nitric acid.
 - (ii) Calcium hydroxide and ammonium chloride.
- (c) State the property of sulphuric acid shown by the reaction of conc. sulphuric acid when heated with [2]
- (i) Potassium nitrate (ii) Carbon
- (d) Conc. nitric acid prepared in laboratory is yellow in colour. Why ? How is this colour removed? [2]

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