

GREENLAWNS SCHOOL, WORLI
TERMINAL EXAMINATION: 2020-21
CHEMISTRY

Std: X
Date: 01/10/2020

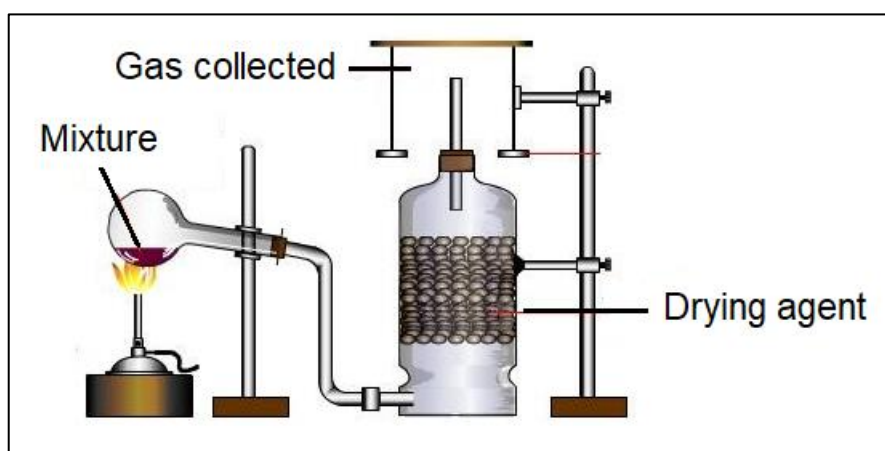
Marks: 40
Time: 1.5 hr

SUBJECTIVE QUESTIONS (40 marks)

Q.1) Give balanced chemical equations for the following: [5]

- a) Laboratory preparation of Hydrogen chloride gas.
- b) Catalytic oxidation of ammonia.
- c) Action of conc. Nitric acid on sulphur.
- d) Aluminium oxide dissolves in sodium hydroxide.
- e) Action of conc. Sulphuric acid on carbon.

Q.2) The diagram below shows the set up for the laboratory preparation of a pungent alkaline gas:



- a) Give a balanced equation for the above preparation. [1]
- b) State how the above gas is collected. [1]
- c) Give equation for the reaction of the above gas with excess of chlorine. [1]
- d) Mention a chemical test for this gas. [1]

Q.3) In the electrolysis of aqueous copper [II] sulphate solution using copper electrodes, answer the following questions:

- a) Give equations for the reactions at the cathode and anode. [2]
- b) What is the observation at the cathode and anode? [2]
- c) State the selective discharge factor used in this electrolysis. [1]

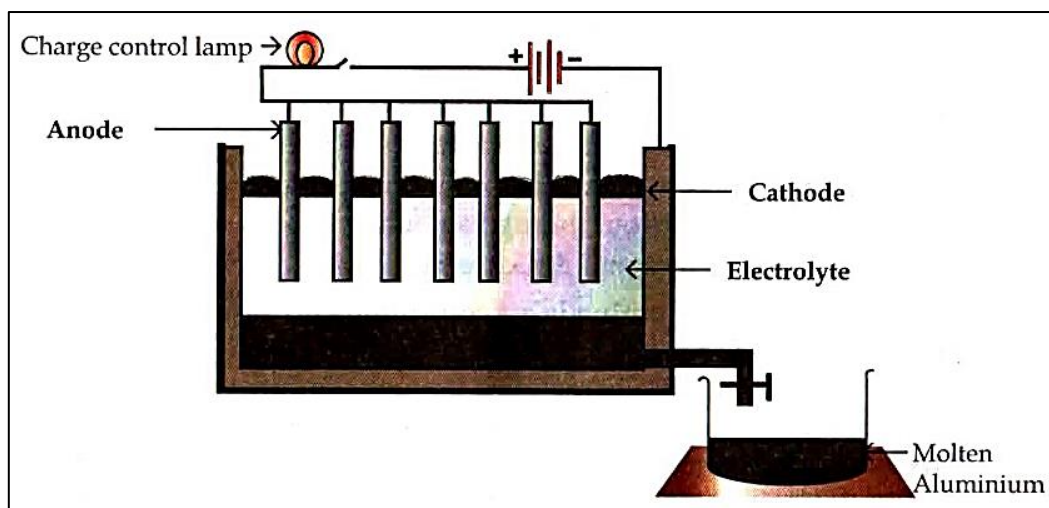
Q.4) Explain with the help of electron dot diagrams, the formation of the following: [2]

- a) Magnesium chloride
- b) Ammonia

Q.5) Define the following as per ionic theory and ionic equations: [3]

- a) Acid
- b) Alkali

Q.6) The following is a sketch of an electrolytic cell used in the extraction of aluminium:



- a) What are the electrodes made of? [1]
- b) Name the two compounds used in the electrolyte apart from alumina. [1]
- c) Justify the addition of the above two compounds. [2]
- d) Give equations for the reactions at the cathode and anode. [2]
- e) Why is a layer of powdered coke sprinkled over the electrolytic mixture? [1]
- f) Why do the anode rods need to be continuously replaced? [1]
- g) What is the role of the control lamp? [1]
- Q.7) Explain diagrammatically the lone pair effect of the oxygen atom of the water molecule leading to the formation of the hydronium ion. [2]
- Q.8) Give reasons for the following: [4]
- a) Atomic size decreases across the period.
- b) HCl gas is collected by the upward displacement of air.
- c) An all glass apparatus is used in the laboratory preparation of nitric acid.
- d) Ionic compounds are soluble in water but insoluble in organic solvents.
- Q.9) Give one point of difference between the following: [3]
- a) Ionisation potential and electron affinity
- b) Metal and electrolyte
- c) Strong and weak electrolyte
- Q.10) In the extraction of aluminium from bauxite, give balanced equations for dressing of the ore by Baeyer's process. [3]
