

Question 5

(a)

- i. Define group and period.
- ii. Name the elements present in Group 1 sequentially.
- iii. Name the first and last element present in Group 17.
- iv. Name the first and last element of Period 2.
- v. In the periodic table, the vertical lines are called groups and the horizontal lines are called periods. [5]

(b) Explain the manufacture of hydrogen gas by electrolysis of water. [5]

Question 6

(a) What are the merits of Mendeleev's periodic table? [5]

(b) Give reasons.

- i. An atom is electrically neutral.
- ii. Mass of an atom is concentrated inside the nucleus of an atom.
- iii. Atom as a whole is an empty space.
- iv. Hydrogen was previously used in meteorological balloons.
- v. Hydrogen is no longer used in meteorological balloons. [5]

Question 7

(a) Moist nitrogen at a pressure of 700 mmHg and a temperature of 27°C is found to occupy a volume of 100 cm³. Find the volume of dry nitrogen gas at STP (Aqueous tension at 27°C is 15 mmHg). [3]

(b) At a constant temperature, a gas at a pressure of 750 mm of mercury occupies a volume of 100cm³. If the volume is decreased by 40%, find the new pressure. [2]

(c) State the law of conservation of mass. Describe its experimental verification. [5]