

Quarterly Examination 2017 – 18

Class – XII (E.M.)

Sub – Chemistry

Time: 03:00hrs

Marks: 75

Note: Attempt all questions.

Que.1: Multiple choice questions: (5)

1. Frenkel defect found in :
(a) ZnS (b) AgI (c) AgCl (d) All of these
2. At normal temperature one lattice point of NaCl shows this defect out of how many lattice points:
(a) 10^5 (b) 10^{13} (c) 10^{15} (d) 10^{25}
3. Boiling point of benzene in Kelvin is:
(a) 351.1 (b) 352.2 (c) 353.3 (d) 354.4
4. The chemical process in the production of steel from hematite are involves:
(a) Reduction (b) Oxidation
(c) Reducing followed by oxidation (d) Oxidation followed by reducing
5. Which of the following is the strongest reducing agent amongst all the hydrides of group 15 elements?
(a) NH_3 (b) PH_3 (c) PH_3 (d) AsH_3

Que.2: Fill in the blank: (5)

1. Face centered cubic cell have No. of particles at the centre.
2. Avogadro number is represented by
3. The energy required to separate the ions from the crystals is called
4. Lattice energy > solution energy \rightarrow
5. + $2NH_3 \rightarrow CO_2 + 3H_2O + 2N_2$

Que.3: Match the pair: (5)

- | | |
|----------------------|----------------|
| 1. Phosphene | (a) Laboratory |
| 2. Contact process | (b) H_2SO_4 |
| 3. Laughing gas | (c) PH_3 |
| 4. $CaCN_2 + C$ | (d) N_2O |
| 5. Hydrogen sulphide | (e) Nitro lime |

Que.4: Very short answer type question: (5)

1. Why do solids have a definite volume?
2. Explain how can you increase the solubility of a gas in a liquid?
3. Define spelt. Is it continuous or not.
4. Write any two uses of nitric acid.
5. How can you form nitro chloroform from chloroform? Write one use of Nitro chloroform.

Que.5: Short answer type question: (Any Five) (2 m) each

1. Differentiate between schottky and frenkel defect.

- At 293 K, the vapour pressure of water is 17 mm of Hg. Calculate the vapour pressure of the solution in which 6 gm of urea is dissolved in 100 gm of water. Molecular masses of water and urea are 18 and 60 respectively.
- Write the difference between osmosis and diffusion.
- Potassium bromide is treated with mercurous nitrate solution it forms a white precipitate. Name the compound formed. Write the balanced equation and give any two properties of the compound so formed.
- Explain the structure of ammonia.
- Briefly describe D.D.T.

Que.6: Short answer type question: (Any Five) (4 m) each

- Describe all three electrical properties of solids. Write order of conductivity of each. Distinguish it with the help of diagram on the basis of band theory.
- What is Raoult's law? Write four differences between ideal and non-ideal solution.
- Explain the following:
(a) Normality (b) Molality (c) Molarity (d) Henry's law
- (a) Which compounds are called blue vitriol, lunar caustic, calomel and quinal.
(b) Write a short note on Nessler's reagent.
- What happens when: (Give reaction and name of compound)
(a) AgNO_3 is heated
(b) Sodium argent cyanide solution reacts with Zinc.
(c) Copper pyrite is oxidized.
(d) Mercuric oxide reacts with hydrochloric acid.
- Describe the structure of Ozone with diagram.
- Draw a labeled diagram of the laboratory method for the preparation of iodoform from alcohol. Write related chemical reactions.

Que.7: Long Answer type question (5 m) each

- Write the equation of the following reactions of chlorobenzene.
(a) Halogenation (b) nitration (c) sulphonation (d) alkylation
Also write any two uses of chlorobenzene.
- Xenon is a noble gas but it forms compounds why? Explain the structure of its two compounds.
- Give the extraction of zinc metal by vertical retort process with diagram on the following points:
(a) Concentration (b) Reduction (c) Roasting (d) Purification
- What is osmotic pressure? Give Berkeley-Hertley process of determination of osmotic pressure and its advantages.
- How many types of voids are present in solids? Explain the reason.