

AL HUDA SCIENCE ACADEMY

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Most Important Long Questions of Chemistry

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Important Long Questions

Question No. 5

1. Explain with examples that Chemistry has many subfields and interdisciplinary fields.
2. Differentiate between the areas which are studied under inorganic and organic chemistry.
3. Discuss the forms of matter — element, compound and mixture — with examples and their significance.
4. What are compounds? Explain its classes with examples.
5. What are mixtures? Describe its types with examples.
6. Highlight the concept of solution, colloidal solution and suspension with suitable examples.
7. Preparation of solutions leads to an important process in chemistry which enables us to purify a compound through crystallization. Describe a process in which potassium nitrate is purified by crystallizing it in water.
8. What are saturated and unsaturated solutions? How are they formed? Explain your answer with examples.
9. Define the term solubility and explain it with an example.
10. How was the electron discovered?
11. What are cathode rays? How are these rays produced in a discharge tube? Also explain that these rays are electrons.
12. What are canal rays? How was the proton discovered from canal rays?
13. Write a note on the discovery of the Neutron.
14. How was the Nucleus discovered by Rutherford? Write about his experiments.
15. What is Bohr's atomic model?
16. Write detailed information about atomic number and mass number.
17. What are energy levels and orbits? Explain their position and the number of electrons in each shell and sub-shell.
18. A system just like our solar system exists in an atom. Comment on this statement.

Question No. 6

1. Why do atoms form chemical bonds and why are noble gases stable? Explain in detail.
2. Explain the formation of an ionic bond and a covalent bond.
3. Describe the formation of covalent bonds and their types with examples.
4. What are covalent compounds? Give examples and also explain the formation of different covalent compounds.
5. Describe polar and non-polar covalent bonds with examples.
6. Discuss the formation of coordinate covalent bonds with examples.
7. Explain the properties of metals keeping in view the nature of the metallic bond.
8. What is a metallic bond? On which factors does the strength of a metallic bond depend?
9. Describe the general properties and classification of acids on the basis of occurrence.
10. Explain the Arrhenius concept of acids and bases.
11. How does sulphuric acid react with the following compounds? NH_4Cl , NH_4NO_3 , MgO , MgCO_3
12. What is observed when CO_2 is passed through lime water (i) for a short duration (ii) for a long duration?
13. Describe the strength of mineral acids and organic acids with examples.
14. Compare the Arrhenius and Bronsted-Lowry concepts of acids and bases.
15. Describe the chemical properties of acids with balanced chemical equations.

Question No. 7

1. Which information is needed to locate the elements in the periodic table if you do not know its atomic number? Is atomic mass helpful for this purpose?
2. How many blocks of elements are present in the periodic table? Are these blocks helpful in studying the properties of elements?
3. Arrangement of the elements in the form of a periodic table is a remarkable achievement of chemists. Comment on this statement citing the benefits of this table.
4. The modern periodic table is the amended form of the earlier table developed by Mendeleev. Elaborate how these two tables are different from each other.
5. What is meant by periods? Discuss the periods of the periodic table.
6. What are groups? Explain the properties of groups.
7. How many blocks are in the periodic table? Briefly explain each block.
8. Explain the variation in the following properties across periods, giving reasons: (a) Atomic radius (b) Ionization energy
9. Define electron affinity and electronegativity with examples. Also discuss the trend of these properties in the periodic table and their relation with the size of atoms.
10. Describe the harmful effects of the major pollutants present in the air. **OR** What are air pollutants? Discuss major air pollutants and their sources in detail.
11. Describe the adverse effects of acid rain in detail.

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