Transweb Educational Services Pvt Ltd
B -147, Sector -6 Noida, UP - 201301,
www.askiitians.com
Email: info@askiitians.com
Tel: 1800-2000-838

Class: IX
Subject: Chemistry
Topic: Atoms and molecules
No. of Questions: 20

1. Hydrogen and oxygen combine in the ratio of 1:8 by mass to form water. What mass of oxygen gas would be required to react completely with 3 g of hydrogen gas?

2. Half life of a radioactive material is 2 days. If the original material is 1 kg, then how much of it will left after 6 days?
   A. 125 gms
   B. 250 gms
   C. 500 gms
   D. 750 gms

3. 1 u or 1 amu means
   A. $1/12^{th}$ mass of C-12 atoms
   B. Mass of C-12 atom
   C. Mass of O-16 atom
   D. Mass of Hydrogen molecule

4. How many atoms are present in a
   (i) H_2S molecule and
   (ii) PO_4^{3-} ion?

5. Two electrons move around a nucleus in circular orbits of radii r and 4r. Ratio of their frequencies is
   A. 1 : 4
   B. 4 : 1
   C. 8 : 1
   D. 1 : 8

6. The percentage of hydrogen in H_2O molecule is
   A. 5.55
   B. 11.11
   C. 44.45
   D. 88.89

Transweb Educational Services Pvt Ltd
B -147, Sector -6 Noida, UP - 201301,
www.askiitians.com
Email: info@askiitians.com
Tel: 1800-2000-838

7. What are polyatomic ions? Give examples?

8. If an hydrogen atom is excited to a state corresponding to n = 4, then according to Bohr's theory, no. of lines emitted will be
   A. 3
   B. 4
   C. 5
   D. 6

9. A sample of ammonia molecule irrespective of source, contains 82.35% of nitrogen and 17.65% of hydrogen by mass. This data supports:
   A. Law of conservation of mass
   B. Law of definite proportions
   C. Las of multiple proportions
   D. Avagadro's Law

10. What is the mass of ---
    A. 1 mole of nitrogen atoms?
    B. 4 moles of aluminium atoms (atomic mass of aluminium = 27)?
    C. 10 moles of sodium sulphite (Na_2SO_3)?

11. Ratio of energy of the hydrogen atom in its first and third excited state will be
    A. 4 : 1
    B. 1 : 4
    C. 16 : 1
    D. 1 : 16

12. Which of the following will have maximum mass?
    A. 0.1 mole of NH_3
    B. 1022 atoms of carbon
    C. 1022 molecules of CO_2
    D. 1 gm of Fe

13. Calculate the number of molecules of sulphur (S_8) present in 16 g of solid sulphur.

14. If a proton is completely converted into energy, then energy released will be about
    A. 13. 6 MeV
    B. 931 MeV
    C. 931 Joules
    D. 931 Calories

Transweb Educational Services Pvt Ltd
B -147, Sector -6 Noida, UP - 201301,
www.askiitians.com
Email: info@askiitians.com
Tel: 1800-2000-838

15. An element X is tetravalent and another element Y is divalent. The compound formed by these two elements will be:
    A. XY
    B. XY_2
    C. X_2Y
    D. XY_4

16. Binding energy of deuterium is 2.23 MeV. Mass defect in amu is
    A. 0.0012
    B. 0.0024
    C. 0.0036
    D. -0.0012

17. Write the chemical formulae of the following compounds:
    a. Magnesium sulphide
    b. Ferric chloride

18. What is valency of an element? How do you derive valency of Aluminium?

19. Define the atomic mass unit.

20. Write down the formulae of
    (i) Sodium oxide
    (ii) Aluminium chloride
    (iii) Sodium sulphite
    (iv) Magnesium hydroxide