DELHI PUBLIC SCHOOL, DURGAPUR

QUESTION BANK & REVISION SHEET FOR TERM-II (2017-18)

CLASS- IX

SUBJECT: CHEMISTRY

ATOMS AND MOLECULES

Q1. State law of conservation of mass.

Q2. State law of constant proportion taking ammonia as an example.

Q3. Which postulate of Dalton explains law of conservation of mass.

Q4.Give one example of diatomic liquid molecule.

Q5.State three main postulates of Dalton's Atomic theory.

Q6.What are the main limitations of Dalton's Atomic Theory.

Q7.Why was oxygen selected earlier for recording the relative atomic mass values? Give reasons

Q8.What is the the mass of one mole of a substance and how many particles are there in it?

Q9. Define a) molecular mass b) Formula unit mass c) Molar mass d) Relative atomic mass e) Atomicity

Q10. State the difference between molar mass and molecular mass.

Q11. What is a polyatomic ion? Give two examples.

Q12. Name the cations and anions in the following :

NH_4Cl b) MgO c) Na_2SO_4 d) $CaCO_3$ e) $K_4[Fe(CN)_6]$ f) NaOH g) $AlCl_3$ h) $Cu(NO_3)_2$ j) $FeSO_3$ k) sodium acetate

Q13. Write the chemical formulae of the following compounds:

a) Iron (III) sulphate
b) Iron(II) sulphate
c) Copper (I) oxide
d) Copper(II) oxide
e) Zinc Oxide
f) Ammonium nitrate
g) Aluminium oxide
Aluminium sulphate
Silver Chloride
Mercurous oxide
Mercuric Chloride
Sodium phosphate
Magnesium acetate

Q14. What is a.m.u? How is it linked with relative atomic mass?

Q15. The Relative atomic mass of Boron is 9. What do you mean by this statement?

Q16. Name an element which is a) Tetra atomic b) Octa- atomic c) Triatomic

Numericals

Q17. Calculate the mass of sodium that contains the same number of atoms as 4g of Ca.
Q18.The ratio by mass of Magnesium and Sulphur in Magnesium sulphide is 3:4.Find the ratio by number of atoms for Magnesium sulphide.

Q19.Calculate the formula unit mass of Aluminium sulphate.
(At wt of Al=27u e, S=32u, O=16u)

Q20. An element X has a valency 3. Write the formula of its oxide and chloride.

Q21.Why is the value of Avogadro's constant is 6.022×10^{23} and not any other value?

Q22. A flask P contains 0.5 mole of oxygen gas .Another flask contains 0.4 mole of ozone gas. Which one of the two has greater number of oxygen atoms?

Q23.An element forms an oxide A_2O_3. What is the formula of the chloride of A? What is the valency of A?

Q24. **0.44g** of a hydrocarbon on complete combustion gives 0.88g of CO_2 and 1.8g of water. Show that this results are in agreement with law of conservation of mass.

Q25. Which has more number of atoms? 10g of N_2 or 10g of NH_3?

Q26. Calculate the number of atoms in a) 9.8g of sulphuric acid b) 3.6g of H_2O c) 1.4g of NH_3.
Q27. The mass of one molecule of a substance is 4.65×10^{-23}g. What is its molecular mass?
Q28. Calculate the number of Aluminium ions in 0.051g of Aluminium oxide.
(At wt of Al=27u)
Q29. The mass of Copper oxide obtained by heating **2.16g** of metallic Copper with Nitric acid and subsequent ignition was found to be **2.7g**. In another experiment, **1.15g** of Copper oxide on reduction yielded **0.92gm** of Copper.Show that these data illustrates Law of constant proportion

Q30.Calculate the number of i) molecules and ii) atoms in 56g of N_2.

STRUCTURE OF ATOM

Q1.Name the scientist who discovere a) electron b) Nucleus c) Neutron.
Q2.State the number of protons , neutrons and electrons with Atomic no.4 and Mass no 9.
Q3.Waht led to the failure of Dalton's Atomic theory?

Q4. State the drawbacks of Rutherford's model

Q5.What is $2n^2$ rule?

Q6State the salient features of J.J Thomson's atomic model.

Q7.What are the limitations of Thomson's model?

Q8.Who modified Rutherdord's atomic model? State Be main characteristics of modern atomic model.

Q9. State two main drawbacks of Neil Bohr's Atomic model.

Q10. Write observations and inferences of Rutherford's alpha particle scattering experiment for determining the structure of atom.

Q11.Define a) Isotopes b) Isobars c) Isotones (with one pair of example of each)

Q12. Why are atomic masses fractional?

Q13.Complete the table:

particles	Proton	Neutron	electron
Relative charge			
Relative mass			
Actual mass			
Actual charge			

Q14.Study the data given and answer the following :

Particle	Electron	Protons	Neutrons
A	2	3	4
B	10	9	8
C	8	8	9
D	8	8	10

a) State the mass no and atomic no of particle A, B, C and D.
b) Which pair represents isotopes?
c) Which one is an ion? Mention the type of ion.
d) Write the pair of isobars in the above table.

Q15.The atomic no and Mass no of of an element are 16 and 32 respectively. Find the number of protons , neutrons and electrons in it. State its valency.Is the element a metal or a non metal? Justify your answer.

Q16.Name the element whose isotope is used in a) Nuclear reactor b) treatment of cancer.

Q17. Explain Bohr and Bury rule for the distribution of electrons in different shells?

Q18. Who introduced the term '' energy level'' as a better name of orbit and why?

Q19. An atom X loses 2 electrons from M shell and it has a completely filled L shell.
Write the electronic configuration and symbol of its ion. State its valencey . Is the element a metal or non metal? Name the element.

Q20.You are given an element A with atomic no 8 and atomic mass 16.Write the chemical formula of the compound formed between A and hydrogen,carbon. What type of compounds are those?

Q21. Naturally occurring Boron has two isotopes whose atomic masses are 10 and 11 respectively.The atomic mass of natural Boron is 10.80u.Calculate the percentage abundance of each isotope in natural Boron.

Q22. Cu consists of two isotopes . ^{63}Cu(relative abundance 69%) and ^{65}Cu(relative abundance 31%). Calculate the relative atomic mass of Cu.

NOTE: QUESTION BANK GIVEN FOR TERM 1 SHOULD ALSO BE PRACTISED THOROUGHLY

SYLLABUS OF ANNUAL EXAMINATION

MATTER IN OUR SURROUNDING
IS MATTER AROUND US PURE
ATOMS AND MOLECULES
STRUCTURE OF ATOM