

HOMEWORK
SUBJECT: CHEMISTRY
CLASS:9th

Note: Answer all the questions in your notebooks. Also learn these answers by heart.

Recommended book: Chemistry 9th Text book by Caravan Book House, Lahore

Chapter.1

Fundamentals of Chemistry

- 1) Define atomic number and mass number.
- 2) Define ion and its types with examples.
- 3) Write any two differences between atom and ion.
- 4) What is free radical? Give an example.
- 5) Define mole and Avogadro's Number.
- 6) State three reasons why do you think air is a mixture and water a compound?
- 7) Explain why are hydrogen and oxygen considered elements whereas water as a compound.
- 8) Define atomic mass unit. Why is it needed?
- 9) What is the significance of the symbol of an element?
- 10) Define molecular mass and formula mass.

Chapter.2

Structure of Atom

- 1) Write four properties of cathode rays.
- 2) Write four properties of canal rays.
- 3) What observations were made by Rutherford during his experiment?
- 4) Write defects of Rutherford's Atomic Model.
- 5) Write any three differences between Bohr's Atomic Theory and Rutherford's Atomic Theory.
- 6) Define shell and subshell.
- 7) Define electronic configuration and write electronic configuration of Na₁₁, Cl₁₇ and Ar₁₈.
- 8) Define isotope and draw structure of isotopes of hydrogen.
- 9) Write any two applications of isotopes. Write down electronic configuration of Al³⁺. How many electrons are present in its outermost shell?

Chapter.3

Periodic Table and Periodicity of Properties

- 1) State Mendeleev's Periodic Law.

- 2) State Modern Periodic Law.
- 3) Define periods and groups.
- 4) Define atomic size.
- 5) What is shielding effect?
- 6) Define ionization energy.
- 7) What is electronegativity?
- 8) Define electron affinity.
- 9) Why cesium has low ionization energy?
- 10) Why shielding effect makes cation formation easy?

Chapter.4

Structure of Molecules

- 1) Why do atoms form chemical bonds?
- 2) Define duplet and octet rule.
- 3) What is a chemical bond?
- 4) Define ionic bond and give an example.
- 5) Define covalent bond and give an example.
- 6) Define coordinate covalent bond and give an example.
- 7) Differentiate between lone pair and bond pair of electrons.
- 8) What are intermolecular forces?
- 9) Define hydrogen bonding and give an example.
- 10) Define dipole-dipole interaction and give an example.

Worksheet

Fill in the blanks

- 1) About ----- percent of elements are metals.
- 2) Naturally occurring elements are -----.
- 3) Brass is a mixture of copper and ----- metal.
- 4) The smallest unit of ionic compound is ----- .
- 5) 1 amu is equal to ----- grams.
- 6) Mass of proton is ----- amu or ----- g.
- 7) Mass of neutron is ----- amu or ----- g.
- 8) Mass of electron is ----- amu or ----- g.
- 9) The number of neutrons in an atom having $A= 238$ and $Z=92$ will be ---
----- .
- 10) Most of the universe exists in the form of ----- .
- 11) The value of N_A is equal to -----

- 12) Percentage of oxygen in crust of earth is----- .
- 13) Percentage of silicon in crust of earth is----- .
- 14) Percentage of aluminium in crust of earth is----- .
- 15) Percentage of oxygen in oceans is----- .
- 16) Percentage of hydrogen in oceans is----- .
- 17) Percentage of chlorine in oceans is----- .
- 18) Percentage of oxygen in atmosphere is----- .
- 19) Percentage of nitrogen in atmosphere is----- .
- 20) Percentage of argon in atmosphere is----- .
- 21) Pressure inside discharge tube was kept----- .
- 22) The mass of proton is ----- times more than that of electron.
- 23) When beryllium was bombarded with alpha particles, the radiations produced were called----- .
- 24) In Rutherford's experiment, the thickness of gold foil was----- .
- 25) The isotopes of an element have different number of ----- .
- 26) In HCl, the intermolecular forces are called ----- .
- 27) Planck's constant is equal to----- Js.
- 28) The U-238 is found in nature nearly ----- %.
- 29) The C-12 is present in abundance of ----- %.
- 30) The isotope used for cancer affecting within the body is ----- .
- 31) Isotopes of I-131 are used for treatment of ----- .
- 32) Second and third periods consist of elements----- .
- 33) Sixth period has ----- elements, while seventh period has----- elements.
- 34) There are ----- vertical columns in periodic table.
- 35) All the periods except first period start with ----- .
- 36) The elements of group 18 are called----- .
- 37) The distance between nuclei of two carbon atoms is----- .
- 38) The first ionization energy of sodium is ----- .
- 39) With the increase in atomic number, the shielding effect ----.
- 40) The electron affinity of fluorine is ----- .
- 41) The electron affinity of fluorine is ----- and iodine is -

- 42) The bond will be ionic if the electronegativity difference between bonded atoms is more than -----.
- 43) Energy required to break intermolecular forces between one mole of liquid hydrogen chloride molecules----.
- 44) The boiling point of alcohol is ----- .
- 45) The melting point of sodium chloride is ----- and boiling point is----- .
- 46) $1 \text{ atm} = \text{---} \text{ mm of Hg} = \text{---} \text{ torr} = \text{---} \text{ Nm}^{-2} = \text{---} \text{ Pa}$
- 47) Gas density is expressed in ----- .
- 48) The density of oxygen gas is ----- at 20C^0 and ----- at 0C^0 .
- 49) Hyper tension is because of----- .
- 50) Blood pressure is measured in units----- .
- 51) Absolute zero has value----- K or----- C^0 .
- 52) The energy required to convert one mole of liquid water into vapours is -----.
- 53) The vapour pressure of water at 0C^0 is----- and at 100C^0 is -----.
- 54) The transition temperature of phosphorus is----- and Sn is -----.
- 55) Saturated solution of sodium thiosulphate in water at 20C^0 has solubility----- .
- 56) Oxidation number of hydrogen in all its compounds is ----- but in metals is ----- .
- 57) Daniel cell is an example of ----- cell.
- 58) Oxidation number of oxygen in all its compounds is ----- but in peroxide is----- and in OF_2 is ----- .
- 59) Stainless steel is an alloy of Fe, Cr and ----- .
- 60) From F, Cl, I and Br the least reactive is ----- .

For assistance
Mr M. Waseem Shahzad
lookwaseem@hotmail.com