

**September exam**

**Class 11**

**Subject... Chemistry**

M. M. :- 70

Time.. 3hrs

**SET A (1x28=28)**

1.Molar mass of Sulphuric acid is

- (a) 30    (b) 342    (c) 98    (d) 42

2.How much volume is occupied by 1 mole of oxygen gas at S. T. P?

- (a) 1.2L    (b) 3.7L    (c) 22.4L    (d) 3.1L

3.SI unit of density is

- (a) m    (b) K    (c) m/s    (d) kg/cubic metre

4.Who discovered electron?

- (a) Rutherford    (b) J. J. Thomson    (c) Bohr    (d) Chadwick

5.Atoms having same mass number but different atomic number are called

- (a) Isotopes    (b) Isobar    (c) Isotones    (d) Isomers

6.Number of protons in an atom with mass number 37 and atomic number 17 is

- (a) 21    (b) 22    (c) 17    (d) 20

7.Elements of which group in periodic table are called Chalcogens

- (a) 5    (b) 16    (c) 17    (d) 18

8.Basis of Mendeleev's periodic table was

- (a) Atomic number    (b) Mass number    (c) protons    (d) Mesons

9.Which of the following is a coinage metal

- (a) Cu    (b) Pb    (c) Al    (d) Na

10.Structure of ClF<sub>3</sub>

- (a) pyramidal    (b) T shape    (c) Angular    (d) Octahedral

11.Which of the following is an ionic compound?

- (a) NaCl    (b) HCl    (c) N<sub>2</sub>    (d) Cl<sub>2</sub>

12.Number of lone pairs on oxygen in water is

- (a) 1    (b) 2    (c) 3    (d) 4

13. Dry ice is

(a) Solid ammonia (b) Charcoal (c) solid CO<sub>2</sub> (d) Sucrose

14. Which of the following is a Lewis acid

(a) AlCl<sub>3</sub> (b) MgCl<sub>2</sub> (c) CaCl<sub>2</sub> (d) BaCl<sub>2</sub>

15. Thermodynamically most stable form of carbon is

(a) Diamond (b) Coal (c) Fullerenes

(d) Graphite

16. Which out of the following is third alkali metal in group 1?

(a) Li (b) Na (c) K (d) As

17. Which of the following show diagonal relationship?

(a) Li, Mg (b) Cl, N (c) Be, Mg (d) Ca, S

18. Which of the following is stored under kerosene?

(a) Na (b) K (c) Li (d) Rb

19. B belongs to s block (T/F)

20. Na has 12 neutrons (T/F)

21. Neutron was discovered by Rutherford (T/F)

22. Free rotation is possible around sigma bond (T/F)

23. Bond order of N<sub>2</sub> is 3 (T/F)

**Read the passage below and answer the questions that follow**

Atoms of same elements having same atomic number but different mass number are called isotopes. Neutrons are responsible for existence of isotopes. Hydrogen has three isotopes - Protium, Deuterium and Tritium. Properties of elements are linked with electrons. Isotopes have same number of electrons due to which they occupy similar positions

24. Define isotopes

25. Which fundamental particle is responsible for existence of isotopes?

26. How many isotopes does hydrogen have?

27. Name the isotopes of hydrogen.

28. Why do isotopes have similar position

**SET B (2x10=20)**

1. Define molarity. How does it change with temperature.?

OR

Find energy of 1 mole of photons

2. Write relation between molecular weight and vapour density.

OR

Difference between empirical and molecular formula.

3. Why  $\text{AlCl}_3$  exist as dimer?

4. Why  $\text{BF}_3$  can easily react with  $\text{NH}_3$ ?

5. Draw structure of  $\text{BeCl}_2$  in gaseous and solid state.

OR

Draw structure of diborane

6. What is diagonal relationship and give its cause.

7. An electron is in one of 3d orbital. Give possible values of n, l and m.

OR

Draw shapes of 2p orbital

8. Difference between emission and absorption spectrum.

9. Write any two properties of d block elements.

OR

Write the general electronic configuration of p and d block elements.

10. Why is bond angle in water 104.5 degree and not 109.5 degree?

OR

Draw the shape of ethene molecule using hybridization. Write the number of sigma and pi bonds.

**SET C (4x3=12)**

1. State Aufbau principle, Pauli exclusion principle and Hund's rule.

2. Write two advantages and one drawback of modern periodic table.

3. Why hydrogen molecule is formed but Helium molecule not formed?

4. State law of constant composition and multiple proportion.

OR

Write main points of diagonal relationship between Be and Al.

**SET D(1x5=5)**

1. Define Ionisation enthalpy and give various factors affecting it. Give its variation in group and period.

OR

Draw M. O. diagram of  $O_2$  and find its bond order and magnetic character.

2.(a) Define inert pair effect, catenation and allotropy.

(b) Why  $CCl_4$  not hydrolysed but  $SiCl_4$  hydrolysed?

OR

(a) Difference between orbit and orbital.

(b) Explain the anomaly in configuration of copper and Chromium