Half yearly exam 2020- 2021

Class -11th

Sub- chemistry

Time 3 hours   **max marks 70**

Ques1. Choose the correct answer-   5

1.Indias population is 85 crore it is written in scientific notation-

a.$8.5 * 10^6$ crore   b.$8.5 * 10^6$ crore

c.$8.5 * 10^6$ crore   d.$8.5 * 10^6$ crore

2.One mole solution containing 1 mole solute volume will be

a.1000 gm solvent   b.1 litre of solvent

c.1 litre of solution   d.22.4 litre of solution

3.S.I. unit of temperature is

a.^0F b.^0C c.^0R d. K

4.Hesse's law is related with-

a.Rate of reaction   b.equilibrium constant

c.Heat of reaction   d.effect of pressure over volume of gas

5.Modern periodic law is based on

a.Atomic no.   b.atomic mass

c.principal quantum no.   d.Agricultural quantum no.

Ques 2 fill in the blanks-   5

1. Substances take part in chemical reaction known as_____.
2. In iodised salt Nacl is mixed with small amount of _____.
3. Value of ΔH is always _____ for combustion reaction.
4. Electron affinity of nobel gases is _____
5. Atomic number of an element is 20. It is placed in _____ group of periodic table.

Ques3. Match the pairs-   5

Paulies exclusion principal   always positive value

Agricultural quantum no.   no. of electron in atom have same set of all 4 quantum no.

Aufbau's rule   it is not possible to measure simultaneously the position and the

Momentum of microscopic particle with absolute accuracy.

Principle quantum no.   size of orbital

Heisenberg's uncertainity principle   in the ground state of an atom the electrons are added progressively to the various orbitals in increasing order of their energies.

Ques.4. give answer in one word /sentence   5

1. How many elements are known?
2. What is the standard unit of atomic mass?
3. Atomic mass of sodium is 23. Then the mass of 6.022×10^{23} atom of sodium will be?
4. Write down example of two state functions.
5. Write correct sequence of successive ionization energies.

Ques.5. write the number of proton and neutron in following elements.   2

$8O^{16}$ $38Sr^{88}$

Or

Write the symbols of atoms for the given value of atomic number(Z) and atomic mass(A)

1. Z=17 , A=35   2. Z=92 , A=233

Ques.6. what is electromagnetic spectrum?   2

Or

What are photons?

Ques.7. What are quantum numbers?   2

Or

What is Zeeman effect?

Ques.8. write the difference between atom and ion?   2

Or

Write the difference between orbit and orbital.

Ques.9. describe the shape of S and P orbitals.

Or

Describe the shape of D orbital.

Ques10. What is (n+l) rule?   2

1. $8O^{-2}$ 2. $7N^{-3}$

Or

Show the hund's rule in following electronic configurations-

Ques.11. one electron is present in first 3rd orbital write down the possible values of n,l,m. 2

Or

Using s,p and d notation explain the following quantum number

1.azimitual quantum number

Ques.12. what is limiting reagent? 2

Or

what is mole? How it is related with Avogadro number?

Ques.13. write down the de- Broglie equation? 2

Or

Electrons revolves in their orbits? Why?

Ques.14. write Hund's rule? 2

Write the quantum theory of max planck.

Ques.15. how many sub orbits are present in n=4(fourth orbit) 3

Or

How many electrons will be present in the subshell having ms value of -1/2 for n=4

Ques.16. what is chemical equation? Write the rules for balancing it. 3

Or

What are significant figures. Write two rules for reporting the significant figures.

Ques.17. how many significant figures are in following 3

1. 0.0025   2. 126000   3. 500.0

Or

Write the following in S.I. units.

1.the minimum temperature of shimla is -10degree Celsius

2. 2 litre milk is consumed in 30 days . write the total volume of milk in S.I. units.

Ques.18. What are transition elements ? write their general properties. 3

Or

What are inner transition elements .write their general properties.

Ques.19. write the general electronic configuration of s,p,d,f block elements.　　3

Or

Elements having the outer most shell electronic configuration as follows.

1. $n \, s^2 \, np^4$ where n=3

2. $(n-1) \, d^2 \, n \, s^2$ where n=4

3. $(n-2) \, f^7 \, (n-1) \, d^1 \, ns^2$ where n=6

Ques.20. what is heat capacity? Prove the expression $Cp-Cv = r$　　5

Or

Explain the heat of combustion . write its applications.

Ques.21. explain the structure of ice.　　5

Or

Which property of water makes it useful as solvent ? which type of compound water can 1. Dissolves 2. Hydrolised explain?

Ques.22. what happens when　　5

1. Sodium metal is placed in water.
2. Sodium peroxide reacts with water.

Or

Explain the reason and write in answer book　　5

1. Be O is insoluble in water while $BeSo4$ is soluble in water ?
2. Ba O is soluble in water while $BaSO4$ is insoluble in water?