**Science**

**revision**

**For**

**1st prep**

**Test 1**

**Choose the correct answer**

1. The atom nucleus contains
2. Protons only
3. **Protons and neutrons**
4. Protons and electrons
5. Electrons only.
6. Silver is symbolized by ------------------
7. Hg
8. Au
9. Cu
10. **Ag**
11. The intermolecular spaces among the molecules of ------------------are very small
12. **Iron**
13. Mercury
14. Nitrogen
15. Water

**Give reason for**

1. The atoms is electrically neutral

**Because it contains equal number of positive protons and negative electrons.**

1. The mass number is greater than the atomic number.

**Because mass number is number of protons and neutrons while atomic number is number of protons in the nucleus.**

1. The handles of cooking pots are made up of plastic.

**Because it is a bad conductor of heat.**

1. Atom of inert gas is not active

**Because the outer most shell is completely filled with electrons**

1. Water is not used to put off petrol fires.

**Because density of petrol is less than density of water so it floats on top of water.**

When a piece of iron of mass 78gm is put in graduated cylinder containing 100 cm3 of water, the reading of the cylinder becomes 110 cm3, calculate the density of iron.

**Answer: volume of piece of iron = 110- 100 = 10** $cm^{3}$**.**

**Density of iron =** $\frac{m}{v}$ **=** $\frac{78}{10}$ **= 7.8 gm/**$cm^{3}$

**Write the scientific term of**

1. The amount of energy gained or lost by electron to transfer from an energy level to another.

(----------------------) **(Quantum)**

1. The smallest part of a matter which can exist in a free state and keep the properties of matter. (---------------------------) **(molecule)**
2. The total number of protons and neutrons inside the nucleus of an atom.(------------------------) **(Mass number)**
3. The simplest pure substance that cannot be analyzed into simpler form. (------------------------) **(Element)**
4. The fundamental building unit of matter that share in chemical reaction(………………………..)**Atom**
5. The chemical substance that is formed from the combination of different atom(…………………………….)**Compound**
6. Imaginary places around the nucleus in which the electrons(……………….)**Energy levels**

**Compare between element and compound**

|  |  |
| --- | --- |
| Element  | Compound |
| * It is the simplest pure form of matter which can’t be analyzed into simpler form
 | * It id a substance which is formed by combination of two atoms or more
 |
| * Similar
 | * Different
 |
| * Hydrogen, oxygen , aluminium
 | * Water , hydrogen chloride
 |
|  |  |

**.**

**Complete the following**

1. The measuring unit of mass -------------------and that of density is ----------------------------. **( gm – gm/cm3)**
2. Some solutions are good conductors of electricity as ------------------------ and others are bad conductors as-----------------------------. **( alkaline solution – sugary solution)**
3. Matter consists of small building units called ---------------- which consist of smaller building units called ----------------------. **( molecules- atom )**
4. The outermost energy level chlorine atom Cl17 contains --------------------electrons, so it is considered from ------------------- gases. **( 7- active )**
5. The ---------------------take the shape of the container, but ----------------- have definite shape**.( liquid – solid )**

**Test 2**

**Choose the correct answer**

1. The nucleus of --------------------doesn’t contains neutrons
2. Neon
3. Oxygen
4. Nitrogen
5. **Hydrogen.**
6. Equal masses of different substances have ----------------- volumes
7. Similar
8. **Different**
9. Constant
10. Equal
11. the smell is distinguishing factor between --------------------
12. iron and copper
13. wood and plastic
14. **perfume and vinegar**
15. water and salt solution
16. the first energy level contains ------------------- electrons
17. 8
18. **2**
19. 18
20. 32

**Complete the following**

1. Sodium symbol is ------------------ , whereas sulphur symbol is ---------------------. **( Na- S)**
2. The liquid element which is composed of one atom is ---------------------while that is composed of two atoms is -------------------------. **( mercury- bromine)**
3. Two molecules of oxygen contains --------------------atoms **( four)**
4. An atom has 4 energy levels and its outer most energy level has 2 electrons. So its atomic number is ------------------------. **(20)**

**Write the electron configuration for each of the following**

1. Na 11 : **2-8-1**
2. Ar 18 : **2-8-8**
3. Al 13 : **2-8 -3**

**What will happen if**

1. An electron gains a quantum of energy

**It will be excited (transfer to higher energy level )**

1. The number of protons changes.

**The atomic number and mass number will be changed**

1. Put a small amount of potassium permanganate in a glass beaker containing water.

**The water will be violet**

1. We add oil to water.

**Oil will floats on the top of water**

1. We add 200 $cm^{3}$ of water to 300 $cm ^{3}$ of alcohol in a measuring cylinder.

**The volume of water and alcohol will be less than 500** $cm^{3}$

**Correct the underlined word**

1. The attraction force among the solid molecules are **very small. (very strong)**
2. Some elements are very active as **gold. ( sodium)**
3. The mass unit volume of a substance is called **weight ( density)**
4. **Nitrogen** is a monatomic molecule. **( sulphur or silver or gold )**

**Give reason for**

1. Ice melts and changes to water after a period of time.

**Because water has low melting point.**

1. A piece of wood floats on water on water, while a piece of iron sinks in it.**Because the density of wood is less than water while density of iron is more than water..**
2. The volume of mixture of alcohol and water is less than the sum of their volumes before being mixed together.

**Because some of the alcohol molecules escape between the intermolecular spaces of water**

**Test 3**

**Write the scientific term**

1. The mass of unit volume of the substance. (-------------------------). **Density**
2. The monatomic liquid element. (------------------). **mercury**
3. The building unit of a matter. (------------------------). **molecules**
4. Negatively charged particles of negligible mass which revolve around the nucleus.(----------------------). **Electrons**
5. The atom that gains a quantum of energy. (--------------------). **excited atom**

**Complete the following**

1. The energy of the level ------------- by increasing the distance from the nucleus.( **Increases** )
2. Chemical energy is stored in -------------------------------. (**Car battery)**
3. An alloy of ------------------ used in making heating coils. **nickel and chrome**
4. The hydrogen molecule consists of ------------------, while the argon molecule consists of ---------------------------------. **(two atoms – one )**
5. The symbol of gold is -----------------------. **( Au )**

**A piece of copper of mass 168gm is immersed in 200 cm3 of water, the water level rises up to 220 cm3. Calculate the density of copper.**

 **Answer: volume of copper =** $v\_{2}$ **-** $v\_{1}$ **= 220 – 200 = 20** $cm^{3}$

 **Density of copper =** $\frac{m}{v}$ **=** $\frac{168}{20}$ **= 8.4 gm/**$cm^{3}$

**What is meant by**

1. Quantum

**It is the amount of energy lost or gained by an atom when it is transferred from one energy level to another**

1. Boiling point

**It is the temperature at which a matter starts to change from liquid state to gaseous state.**

1. Atomic number:

**It is the number of + ve protons in the nucleus or number of –ve electrons in energy level in an atom**

**Write the electron configuration of each of the following**

1. Li 3: **2 - 1**
2. Mg 12 : **2- 8 - 2**
3. Ca 20: **2- 8 – 8 - 2**
4. Ne 10: **2- 8**

**Put (√) or (x)**

1. The motion of gas molecules is limited. **( x )**
2. Ice and cork sink in water. **( x )**
3. Mercury is from liquid metals. **( √ )**
4. The molecules of the same substances are different from each other.

**( x )**

**Test 4**

**Choose the correct answer**

1. The chemical formula of the potassium is
2. P
3. S
4. Na
5. **K**
6. The volume of alcohol and water is ----------------------------- the sum of their volumes before mixing.
7. Equal to
8. More than
9. **Less than**
10. The number of energy levels in the largest known atom is --------------------
11. 9
12. 8
13. **7**
14. 5
15. The fourth energy level of an atom is saturated by -------------------electrons
16. 2
17. 18
18. 8
19. 32

**Write the scientific term of**

1. The space that is found among molecules. (--------------------). **Intermolecular spaces**
2. The inert gas by which balloons are filled to rise upwards during festivals. (---------------------). **Helium**
3. The imaginary places in which electrons can moves according to its energy. (-------------------------). **Energy levels**
4. The total number of protons and neutrons inside the atom nucleus. **Mass number**

**What is meant by**

1. Density

**It is the mass of unit volume.**

1. Mass number

**It is the number of protons and number of neutrons in a nucleus.**

1. Element:

**It is the simplest form of matter than cannot be analyzed into simpler substances**

1. Atom

**It is the building unit of matter that can take apart in chemical reaction**

**Give reason for**

1. When you leave the perfume bottle opened you smell it all over the room.

**Because molecules of matter are in continuous motion**

1. Painting metallic bridges and holders of light bulb from time to time.

**To protect it from rust and corrosion**

1. The equation 2$n^{2}$ is not applied on levels higher than 4th level.

**Because energy level will be unstable if it is filled with more than 32 electrons**

1. Electricians use screwdriver made up of steel iron with woody handles.

**Because steel iron is good conductor of electricity while wood is bad conductor of electricity**

**Match**

|  |  |
| --- | --- |
| A  | B  |
| 1. Number of positive protons in nucleus
 | 1. Wood and plastics
 |
| 1. Substances that can conduct heat and electricity
 | 1. Mass number
 |
| 1. Total number of protons and neutrons
 | 1. Atomic number
 |
| 1. Bad conductors of heat and electricity
 | 1. Iron and copper
 |
|  | 1. Energy level
 |

1. **2- 3- 4-**

**Test 5**

**Complete the following**

1. An alloy of ------------------------ is used in making jewels.( **Gold and copper)**
2. The symbol of aluminium is ---------------------------- while Ar is the symbol of -------------------. (**Al- argon**)
3. Matter is composed of small units called ----------------------, while these units are composed of smaller units called ------------------------.

**(molecules- atoms)**

1. The measuring unit of the mechanical energy is -----------------------. **(joule)**
2. Kinetic energy = ½ mass x-----------------.**( velocity )**

**Choose the correct answer**

1. A piece of metal its density is 5.5 gm/cm3 when it is placed in water, it will ------------------------(water density is 1gm/cm3)
2. Floats
3. Sink
4. Suspend
5. Water molecule consists of ---------------------------.
6. Two hydrogen atoms and oxygen atom.
7. One hydrogen atom and two oxygen atoms
8. One hydrogen atom and one oxygen atom.
9. When the atomic number for an element equals its mass number , this means that there is no ----------------------------------in the nucleus of that elements
10. Electrons
11. Protons
12. Neutrons

**Put (√) or (**

1. An object of mass 25 gm and volume 10 $cm^{3}$sinks in water. ( )
2. Neon is a noble gas that takes part in chemical reaction. ( )
3. Water consists of two atoms (

**Write the symbols of the following elements**

1. Sodium: Na
2. Magnesium: Mg
3. Sulphur : S
4. Carbon: C

**Compare between solid , liquid and gas according to the attraction force between molecules and intermolecular spaces.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Solid**  | **Liquid**  | **Gas**  |
| **Intermolecular forces**  | **v. strong** | **Weak**  | **v. weak**  |
| **Intermolecular spaces**  | **Large**  | **Small**  | **v. small**  |

**Compare between proton –neutron – electron**

|  |  |  |  |
| --- | --- | --- | --- |
| **points** | **proton** | **neutron** | **Electron** |
| **position** | Inside the nucleus | Inside the nucleus | Around nucleus |
| **charge** | Positive charge | neutral | Negative charge |
| **mass** | Very large | Very large | Very small |