ATOMIC STRUCTURE

Who proposed the Atomic principle of matter?
(a) Pascal (b) Dalton
(c) Newton (d) Avogadro
Ans. (b) [SSC MTS Exam, – 2014]

Expl:- Dalton proposed the atomic theory of Matter. According to this atom is made up of very smaller indivisible particles which are known as atoms.

Which two basic forces are able to provide on attractive force between the two neutrons?
(a) Gravitational and Electro state
(b) Some other forces
(c) Gravitational and Nuclear
(d) Electro state and Nuclear
Ans. (c) [SSC CHSL Exam, 2012]

Expl:- In the attraction between the two neutron there are two force (i) Gravitational (ii) Nuclear

When a bond is formed between two atoms, the energy so system will be–
(a) Increase (b) Decrease
(c) Remain the Same (d) May increaser decrease
Ans. (b) [SSC CHSL Exam, 2014]

Expl:- When a bond is formed between two atoms, then energy of system will decrease.

Element having atomic number 29 is related to –
(a) S-Block (b) D-Block
(c) P-Block (d) F-Block
Ans. (b) [SSC CGL Exam, 2013]

Expl:- According to Aufbau principle electronic configuration of almost all element is possible and thus according to energy level block are divided as s,p,d,f block. Increasing order of energy is given as S<P<D<F. Atomic number of cu and cr is 29 and 24 respectively, so cu is placed in d-block elements.

Which of the following particle being charged negatively?
(a) Proton (b) Neutron
(c) Positron (d) Electron
Ans. (d) [SSC LDC Exam, 2005]

Expl:- Electron is a negatively charged particle discovered by J.J. Thomson in cathode rays experiment. Electrons revolve around the nucleus in atom. Mass of electron is (me)9-1×10–31kg and charge on electron is 1.6×10–19C. Proton is a positively charged and Neutron is negatively charged particle.

6. Cathode rays are–
(a) Stream of α-particles
(b) Stream of electrons
(c) Electromagnetic waves
(d) Radiations
Ans. (b) [SSC Stenographer Exam, 2012]

Expl:- Cathode rays are stream of electrons.

7. Which of the following element is most electronegative?
(a) Sodium (b) Oxygen
(c) Chlorine (d) Fluorine
Ans. (d) [SSC CHSL Exam, 2013]

Expl:- Fluorine is most electronegative element while Francium is most electropositive element in periodic table.

8. Which of the following determines the chemical properties of an element?
(a) Number of protons (b) Number of electrons
(c) Number of neutrons (d) All of the above
Ans. (b) [SSC CGL Exam, 2012]

Expl:- Chemical properties of an element depends upon the number of electrons revolving around the nucleus of atom.

9. The product equivalent weight and valency of an element is equal to–
(a) Atomic weight (b) Vapor density
(c) Specific heat (d) Molecular weight.
Ans. (a) [SSC CHSL Exam, 2013]

Expl:- The product of equivalent weight and valency of an element is equal to its atomic weight.

10. Orientation of atomic orbital is controlled by –
(a) Principle Quantum number
(b) Magnetic Quantum number
(c) Electron spin quantum number
(d) Azimuthally Quantum number
Ans. (b) [SSC MTS Exam, – 2013]

Expl:- Orientation of atomic orbital is controlled by magnetic quantum number.

11. **Who is awarded by Noble prize for the discovery is neutron?**

(a) Chadwick (b) Rutherford
(c) Neels Bolur (d) Rontgen

Ans. (a) [SSC LDC Exam, 2005]

Expl:- Neutron is discovered by J. Chadwick in 1932–80 that he is awarded by Nobel prize Newton is a Neutral particle and its mass is equal to the mass of Hydrogen atom.

12. **An Element Atomic number 17 and Mass number 36, then number of neutrons present in it–**

(a) 17 (b) 19
(c) 36 (d) 53

Ans. (b) [SSC MTS Exam, – 2008]

Expl:- Number of Neutrons = Mass number – Atomic number present in an element
= 36-17= 19

13. **Which of the following element has relative atomic weight that is made up to atom containing each of 17 protons, 18 Neutrons and 17 Electrons?**

(a) 52 (b) 35
(c) 18 (d) 17

Ans. (b) [SSC Stenographer Exam, 2005]

Expl:- Atomic weight = Atomic number (No of Protons) + No of neutrons
35 = 18+17

14. **Which of the following has maximum Mass?**

(a) Electron (b) Proton
(c) Neutron (d) Nucleus of Hydrogen

Ans. (c) [SSC CGL Exam, 2013]

Expl:- Mass of the following is given as.
(me) electron = 0.000549 (amu)
(mp) Proton = 1.00728 (amu)
(mn) Neutron = 1.00867 (amu)
Nucleus of Hydrogen = 1.00783 (amu)
Amu = Atomic Mass Unit

15. **Atoms having equal number of protons but different number of Neutrons are called –**

(a) Positive Ion (b) Negative ion
(c) Isotopes (d) Higgs boson

Ans. (c) [SSC CHSL Exam, 2015]

Expl:- Isotopes are the atoms of the same element having similar atomic number but different mass number. Isotopes of Hydrogen →
$H_1^1 H_1^1$ → Protium
$H_1^2 H_1^2$ → Deuterium
$H_1^3 H_1^3$ → Tritium

16. **Atoms having same no of neutron but different no of electrons or protons are called –**

(a) Isotopes (b) Isobars
(c) Isotones (d) Allotrops

Ans. (c) [SSC Stenographer Exam, 2018]

Expl:- Atoms having equal number of neutrons but different number of protons are called Isotones. For Example O_8^{16} O_8^{16}, N_7^{15} N_7^{15} No of neutrons in O → 16–8 = 8, No of Neutrons in N = 15–7 = 8.

17. **Nucleotide have same atomic number are called:**

(a) Isotopes (b) Isobar
(c) Isotones (d) Isoelectrons

Ans. (a) [SSC MTS Exam, – 2015]

Expl:- Nucleoids having same atomic number are known as Isotopes.

18. **What is the value of Avogadro number?**

(a) 6.023×1023 (b) 6.023×1022
(c) 6.023×1024 (d) 6.023×1025

Ans. (a) [SSC MTS Exam, – 2015]

Expl:- Avogardro number is the number of units in one mole of any substance equal to 6.023×1023. It is also known as avagadro number or avagadro constant (N) = 6.023×1023 particles.

19. **Which of the following is not a nucleon?**

(a) Proton (b) Electron
(c) Neutron (d) Positron

Ans. (d) [SSC CGL Exam, 2013]

Expl:- Positron is the antiparticle of an electron, because its mass and charge equal to electron. It's a positively charged fundamental particle. Nucleon are the constituent particles of atomic nucleus.

20. **Chemical behavious of an element depends upon its–**

(a) Number of protons in nucleus
(b) Number of Neutrons in nucleus
(c) Number of electrons revolving around nucleus
(d) Number of nucleons in nucleus

Ans. (c) [SSC CHSL Exam, 2018]

Expl:- Number of electrons orbiting around the nucleus the chemical behavious of an element depends upon the no of electrons orbiting around the nucleus.

21. **Atomic nuclei are composed of–**

(a) Protons and electrons
(b) Protons and Isotones
(c) Electrons and neutrons
(d) Protons and neutrons

Ans. (d)

Expl:- Protons and neutrons are found in nucleus and an electron revolves around the nucleus in different orbitals.

The fundamental particles that composed on atom are–

(a) Proton, electron, meson

(b) Proton, electron, photo

(c) Proton, electron, Neutron

(d) Proton, electron, Deuteron

Ans. (c) [SSC MTS Exam, – 2006, SSC CHSL Exam, 2013]

Expl:- Electrons, Proton, Neutron are the fundamental particles of an atom. Electron was discovered by JJ Thomson, Proton was discovered by Rutherford and Neutron was discovered by Chadwick.

Charge on electron = Negative

Charge on Proton = Positive

Charge on Neutron = Zero (Neutral) No charge

23. Electronic configuration of Element Atomic number 20 is –

(a) 2, 8, 10 (b) 2, 6, 8, 4

(c) 2, 8, 8, 2 (d) 2, 10, 8

Ans. (c) [SSC CHSL Exam, 2010]

Expl:- Electronic configuration of element Atomic number 20(ca) calcium

Shell	K	L	M	N
No. of Electrons	2	8	8	2

24. Who discovered the element Atomic number 106?

(a) Rutherford (b) Seaborg

(c) Lorens (d) Kurchatov

Ans. (b) [SSC MTS Exam, – 2013]

Expl:- Seaborg is a synthetic element with atomic number 106 and mass number 269 in d-block. In 1951 American chemist Theodore Seaborg awarded by Nobel Prize for the discovery of total 10 elements. Atomic number 106 element is one of them. It is also known as Seaborgiom. Its symbol is sg.

25. Mark the compound which posses Ionic, Covalent and Co-ordinate bond:

(a) H_2O (b) NH_4Cl

(c) SO_3 (d) SO_2

Ans. (b)

Expl:- In Ammonium chloride (NH_4Cl), NH_4^+ and Cl^- form ionic bond. While Hydrogen ion and Nitrogen Ions forms covalent bonds and co-ordinate bonds.

26. Property of Ammonia is –

(a) It is miscible in water

(b) It is an colourless gas

(c) It is a yellowish gas

(d) In its aqueous solution Red Litmus turns to Blue Litmus

Ans. (d) [SSC CHSL Exam, 2011]

Expl:- Ammonia is a colourless gas with a pungent smell. It is highly miscible with water. Ammonium Hydroxide [NH_4OH] is an aqueous solution of Ammonia. It turns red Litmus to blue.

27. Paper of old books turns to brownish color due to –

(a) Continue use of book

(b) Due to dust

(c) Oxidation of cellulose

(d) Lack of ventilation

Ans. (c) [SSC MTS Exam, – 2014]

Expl:- Paper of old books turns to brownish due to oxidation of cellulose.

28. Which of the following is strongest oxidizing agent?

(a) Oxygen (b) Chlorine

(c) Fluorine (d) Iodine

Ans. (c) [SSC CHSL Exam, 2015]

Expl:- Fluorine is the strongest oxidizing agent and its oxidation number is 1. Its electro negativity is more as compare to other elements oxidation number indicate the degree of oxidation or (Loss of electron) of an atom in a compound.

29. Positive oxidation state of oxygen is possible only in–

(a) OF_2 (b) Cl_2O

(c) H_2O (d) N_2O

Ans. (a) [SSC Steno– 2011, SSC CHSL Exam, 2010]

Expl:- Normally oxidation state of oxygen is –2 but in OF_2 its oxidation number is +2.

30. What is the oxidation number of Nickel in $K_4[Ni(CN)_4]$?

(a) Zero (b) +4

(c) –4 (d) +8

Ans. (a) [SSC MTS Exam, – 2013]

Expl:- In $K_4[Ni(CN)_4]$, oxidation number of Nickel is Zero.

31. If $MgCl_2$ contains one Millions of Mg^{2+} Ions, then how many Chloride Ions are present in it?

(a) 10 Million (b) One million

(c) Two million (d) Half million

Ans. (c) [SSC CHSL Exam, 2015]

Expl:- $MgCl_2 \rightarrow Mg^{2+} + 2Cl^-$

Number of particles in a mole (atom, mole ale or ions) are definite

$\therefore$ Ions in Mg^{2+} = one million

$\therefore$ ions in $_2Cl^-$ = 2 × one million = to million.

32. When Helium atom Loses electron, then it becomes–

(a) Proton
(b) Positive Helium ion
(c) Negative Helium Ion
(d) Alpha Particle

Ans. (b) [SSC CGL Exam, 2015]

Expl:- When helium atom Loses electron, then it form positive helium ion.

$He(g) \rightarrow He^{+}(g) + e^{-}$

33. The mass number of a nucleus is –

(a) Always less than its atomic number
(b) Always more than its atomic number
(c) Always equal to its atomic number
(d) Sometimes more and sometimes equal to its atomic number

Ans. (d) [SSC CHSL Exam, 2010]

Expl:- The mass number of an atom is equal to the number of neutrons and number of protons present in it, which is sometimes more or sometimes equal to its atomic number.

34. The weight of 6.023×10^{22} atoms of carbon is –

(a) 12gram
(b) 120gram
(c) 1-2gram
(d) 0-12gram

Ans. (c) [SSC MTS Exam, – 2013]

Expl:- Both approaches are correct. Avogadro's number is $6.02214129 \times 10^{23}$ and represents the number of carbon-12 atoms in 12 grams of unbound carbon-12 in the ground electronic state. $12 grams/6.02214129 \times 10^{23} = 1.9926467 \times 10^{-23} grams$. The unified atomic mass unit (u) is $1.660538921 \times 10^{-24}$ grams.

35. Which of the following particle has the dual nature of particle wave?

(a) Neutron
(b) Electron
(c) Meson
(d) Proton

Ans. (b) [SSC CGL Exam, 2015]

Expl:- Electron is an atomic particle having dual nature of particle wave. De Broglie explain in His Hypothesis that when electrons passes through the solid crystal surface then it show diffraction phenomenon, which is the property of wave. Davisson Germen also prove that electrons have De Broglie Wavelength–

$\lambda = \frac{h}{p}\frac{h}{p} = \frac{h}{mv}\frac{h}{mv}$

H → Plants constant
P → Momentum
M → Mass
v → Velocity

36. Mass number is the sum of –

(a) Electrons and Protons
(b) Protons and Neutrons
(c) Electrons and Neutrons
(d) Only Protons

Ans. (b) [SSC CHSL Exam, 2015]

Expl:- Pure Substance made up of only one type of atoms is called an element subatomic particle present inside the nucleus is proton and neutron sum of proton and neutrons is equal to atomic number.

MAIN METALS

1. An alloy used in making heating elements for electric heating devices is –

(a) Solder
(b) Alloy steel
(c) Nichrome
(d) German Silver

Ans. (c) [SSC CHSL Exam, 2015]

Expl:- Heating effect of electric current is used in the appliances electric Heater, electric iron, Room Heater etc. These Heating devices are operated by coils of very High Resistance, which are made up of alloy Nichrome.

Nichrome is an alloy of Nickel, chromium and iron.

2. The use of Heat treatment of ore that includes smelting and roasting is termed as–

(a) Cry metallurgy
(b) Pyrometallurgy
(c) Electrometallurgy
(d) Hydrometallurgy

Ans. (b) [SSC CHSL Exam, 2015]

Expl:- Pyrometallurgy is the branch of science and technology concerned with the use of the High temperature to extract and purify metals. It consists of the thermal treatment of minerals and metallurgical ore (calcinations, Roasting, Refining and Smelting). Fe, Cu, Zn, Cr, Tin etc. extracted by this process.

3. Which of the following does not contains silver?

(a) German Silver
(b) Horn Silver
(c) Ruby Silver
(d) Lunar Silver

Ans. (a) [SSC CGL Exam, 2013]

Expl:- German Silver contains copper (60%), Zinc (20%) and Nickel (20%).

4. Aluminum is extracted from –

(a) MICA
(b) Copper
(c) Bauxite
(d) Gold

Ans. (c) [SSC MTS Exam, – 2014]

Expl:- Aluminum is not found in native (free) state. It is found in combining state with different minerals. Aluminum has three principal ores Bauxite, Diaspora, cryolite.

Bauxite → $Al_2O_3.2H_2O$, Diaspore → $Al_2O_3.H_2O$, Cryolite → Na_3AlF_6

The ore of Aluminum is –

(a) Florspar (b) Bauxite
(c) Hematite (d) Chalco Pyrites

Ans. (b) [SSC CGL Exam, 2015]

Expl:- It is a mixture of hydrous aluminum oxides, aluminum hydroxides, clay minerals, and insoluble materials such as quartz, hematite, magnetite, siderite, and goethite. The aluminum minerals in bauxite can include: gibbsite Al(OH)3, boehmite AlO(OH), and, diaspore, AlO(OH).

Uses: Primary ore of aluminum, also used as an abrasive
Diagnostic Properties: Often exhibits pisolitic structure; color
Chemical Composition: Variable but always rich in aluminum oxides and aluminum ...
Mohs Hardness: 1 to 3

6. Brass contains –

(a) Copper and Zinc (b) Copper and Tin
(c) Copper and silver (d) Copper and Nickel

Ans. (a) [SSC CGL Exam, 2014]

Expl:- Brass is an alloy of copper and zinc. The propitiation of Zinc and copper can be varied to create a range of brass with varying properties. It is also used as a decorative item as it shines as gold. In Locks, Gear, Valve and Musical instrument it is used and its flexible as compare to other metals.

7. Brass is made of –

(a) Copper and tin (b) Tin and lead
(c) Copper and Zinc (d) Copper, tin and Zinc

Ans. (c) [SSC CHSL Exam, 2011]

Expl:- Brass is a metal alloy made of copper and zinc; the proportions of zinc and copper can be varied to create a range of brasses with varying properties. It is a substitutional alloy; atoms of the two constituents may replace each other within the same crystal structure.

8. Maximum permissible concentration of copper in drinking water in mg/L is –

(a) 0.01 (b) 0.05
(c) 1.0 (d) 2.0

Ans. (d) [SSC CHSL Exam, 2011]

Expl:- According to the notification published by WHO 'Guidelines for drinking water quality' in 2011 (4th edition), Maximum permissible concentration of Copper in drinking water is 2.0mg/L

9. Brass gets discoloured in air due to the presence of which gas in air?

(a) Nitrogen (b) Hydrogen sulphide
(c) Oxygen (d) Carbon dioxide

Ans. (b) [SSC CGL Exam, 2013]

Expl:- Copper and Zinc combined to form Brass. In the presence of Hydrogen sulphide (H_2S) Zn reacts with Hydrogen and form a compound Zinc Hydroxide of Ugly red colour and copper react with sulphur to form a black coloured compound copper sulphide and as a result of it brass gets discoloured.

10. Which type of Glass is used for making glass reinforced plastic?

(a) Pyex glass (b) Quartz glass
(c) Flint glass (d) Fiber glass

Ans. (d) [SSC CGL Exam, 2011]

Expl:- Fiber glass is used for making glass reinforced plastic.

11. Purification of copper is done by –

(a) By Heating
(b) By Oxidation
(c) Electrolytic decomposition
(d) Zone refining Method

Ans. (c) [SSC MTS Exam, – 2008]

Expl:- Copper is found in both free and combined state. Its purification is done by Electrolytic decomposition.

12. Non-Metal found in Liquid state is –

(a) Bromine (b) Nitrogen
(c) Fluorine (d) Chlorine

Ans. (a) [SSC CHSL Exam, 2013]

Expl:- Bromine belongs to 7th group of periodic table and only this Non-Metal is found is Liquid state at normal temperature.

13. The phenomenon of ejection of electrons from the metal surface when a light of suitable frequency falls on it is called–

(a) Electric decomposition
(b) Ionization
(c) Photoelectric effect
(d) None of the above

Ans. (c) [SSC CGL Exam, 2006]

Expl:- When a Light of suitable frequency falls on the surface of metal, then electrons eject out from it, this phenomenon is known as photoelectric effect.

14. Type of metals used in Printing in alloy of–

(a) Lead and Copper (b) Lead and Antimony
(c) Lead and Bismuth (d) Lead and Zinc

Ans. (b) [SSC CPO Exam, 2006]

Expl:- Type of Metal Used in Printing in alloy of Lead, tin and Antimony and their quantity in % given as follows.
Lead = 60–86%, Antimony = 11–30%,
Tin = 3–20%

15. **Acute Lead poisoning is also known as –**

(a) Itai-Itai (b) Plumbism

(c) Neuralgia (d) Byssinosis

Ans. (b) [SSC CHSL Exam, 2010]

Expl:- Disease caused by lead poisoning is known as Plumbism. It is also known as.

16. **Which of the following metal has least melting point?**

(a) Gold (b) Silver

(c) Mercury (d) Copper

Ans. (c) [SSC CHSL Exam, 2014]

Expl:- Mercury has least melting point. In its outer orbital Binding energy of electron is more. So an electron does not participate in Metallic bonding and does not form crystal. At room temperature – 38.830C it remain in Liquid State.

17. **Which of the following metal forms Amalgam with other metals?**

(a) Lead (b) Zinc

(c) Mercury (d) Copper

Ans. (c) [SSC CGL Exam,2005]

Expl:- Mercury on reacting with other metals form Amalgam. For Example- Dental Amalgam (Silver-Mercury), Potassium Amalgam, Sodium Amalgam, gold Amalgam, Aluminum Amalgam etc. Mercury is used in thermometer.

18. **Amalgam is an alloy in which the base metal is–**

(a) Aluminum (b) Mercury

(c) Copper (d) Zinc

Ans. (b) [SSC Stenographer Exam,2012]

Expl:- Mercury is used in thermometers, barometers, manometers, sphygmomanometers, float valves, mercury switches, mercury relays, fluorescent lamps and other devices, though concerns about the element's toxicity have led to mercury thermometers and sphygmomanometers being largely phased out in clinical environments in favor of alternatives such as alcohol- or galinstan-filled glass thermometers and thermistor- or infrared-based electronic instruments.

19. **What is Baeyer's reagent?**

(a) Bromine water

(b) Acidic Potassium Permanganate

(c) Hydrogen Para oxide

(d) Alkaline Potassium Permanganate

Ans. (d) [SSC MTS Exam, – 2013]

Expl:- Baeyers reagent is Alkaline Potassium Permanganate ($KMnO_4$).

20. **Hygroscopic substances are those substance which ready absorb–**

(a) Hydrogen Sulphide (b) Carbon Mono oxide

(c) Ammonia (d) Water Vapors

Ans. (d) [SSC MTS Exam, – 2014]

Expl:- Hygroscopic substances are the substance which absorb water vapors readily from its surrounding such as sugar, Honey, ethanol etc.

21. **Which of the following causes Rusting of iron?**

1. Oxidation
2. Reduction
3. Chemical reaction with oxygen
4. Chemical reaction with CO_2

(a) 1 and 2 (b) 2 and 3

(c) 3 and 4 (d) 1 and 3

Ans. (d) [SSC CHSL Exam, 20

Expl:- In the Presence of Moisture and oxygen oxidation occur which deposited a Reddish-Brown Layer on iron. This Reddish brown Layer on iron is rest (Fe_2O_3) ferric oxide.

22. **Rusting of Iron is –**

(a) Due to oxidation (b) Due to carbonation

(c) Due to exidation (d) Due to corrosion

Ans. (a) [SSC Tax Asst. Exam,20

Expl:- Oxidation is the loss of electrons or an increase in oxidation state by a molecule, atom, or ion. Reduction is the gain of electrons or a decrease in oxidation state by a molecule, atom, or ion.

23. **The rusting of iron metal in air needs both–**

(a) Carbon dioxide and Moisture

(b) Water and Paint

(c) Oxygen and grease

(d) Oxygen and Moisture

Ans. (d) [SSC CGL Exam,20

Expl:- Rust is an iron oxide, usually red oxide formed by the redox reaction of iron and oxygen in the presence of water or air moisture. Several forms of rust are distinguishable both visually and by spectroscopy, and form under different circumstances.

24. **Which of the following is required for the rusting of iron?**

(a) Oxygen and carbon dioxide

(b) Oxygen and water

(c) Only carbon dioxide

(d) Only oxygen

Ans. (b) [SSC CPO Exam, 20

Expl:- The presence of water and oxygen is essential for the rusting of iron. Impurities in the iron, the presence of water vapor, acids, salts and carbon dioxide hastens rusting. Pure iron does not rust in dry and carbon dioxide free air.

it also does not rust in pure water, free from dissolved salts. Metals like chromium, zinc and magnesium prevent rusting to a great extent and alkalis also help to prevent rusting.

25. Iron rusts quickly in –

(a) Rain water (b) Distilled water

(c) Sea water (d) River water

[SSC CGL Exam, 2014]

Ans. (c)

Expl:- Iron reacts with oxygen in the presence of water and air and forms rust. Rust plays an important role in the corrosion of iron. water containing salt (such as sea water) cause rusting of iron faster.

26. The rusting of iron–

(a) Decreases its weight

(b) Increases its weight

(c) Remains same

(d) Can't say (unpredictable)

[SSC MTS Exam, – 2008]

Ans. (b)

Expl:- Rusting of iron is a chemical process. By rusting weight of iron increase Product formed by Rusting is Ferric oxide. Its deposited over iron as a reddish brown layer.

a molecule consisting of iron and oxygen. When rust forms, the mass of the iron object is increased by the mass of oxygen that has combined with some of the iron.

27. What is rusting of Iron?

(a) Physical change

(b) Electric change

(c) Photo Chemical change

(d) None of the above

[SSC MTS Exam, – 2013]

Ans. (d)

Expl:- Chemical changes are the changes, in which new product formed and properties of this new product is completely different from the base particle. The product formed by the chemical change cannot be reversed in its base matter such as Rusting of Iron, curding of Milk, cooking of food, burning of candle etc.

28. Which of the following is not a chemical change?

(a) Burning of paper

(b) Digestion of food

(c) Conversion of water into steam

(d) Burning of coal

[SSC MTS Exam, – 2014]

Ans. (c)

Expl:- Conversion of water into steam is a physical change. Because it is a physical change and it is reversible process. So water can be obtained again from this steam.

29. If the bullets could not be removed from gunshot injury of a man, it May cause poisoning by–

(a) Mercury (b) Lead

(c) Iron (d) Arsenic

[SSC CGL Exam, 2010]

Ans. (b)

Expl:- If the bullets could not be removed from gunshot injury of a man, it causes poisoning in the body due to the presence of Lead.

30. The ratio of pure gold in 18 carat gold is –

(a) 100% (b) 80%

(c) 75% (d) 60%

[SSC CPO Exam, 2005, SSC MTS Exam, – 1999]

Ans. (c)

Expl:- Purity of gold is measured in carat. 24 carat gold is pure gold % of pure gold in 18 carat gold can be found by following method– $\frac{18}{24} \times 100 = 75\%$

31. Purity of gold is expressed in terms of carat. Purest form of gold is–

(a) 24 Carat (b) 99.6 Carat

(c) 91.6 Carat (d) 22 Carat

[SSC CPO Exam, 2007]

Ans. (a)

Expl:- That is the carat of pure gold?

There are many different recipes for gold alloys, for our purposes we will just describe the more common jewellery alloys. 24ct (twenty four carat) gold is pure gold, so all 24 parts are pure gold. Soft and extremely durable.

32. The King of metal is –

(a) Gold (b) Silver

(c) Iron (d) Aluminum

[SSC MTS Exam, – 2002, SSC CHSL Exam, 2015]

Ans. (a)

Expl:- Gold is the most valuable metal. It does not formed by any kind of alloy. 24 carat is the purest form of gold. Gold can be dissolves in aqua regia.

33. Standard 18 carat Gold sold in the Market is –

(a) 82 parts of gold and 18 parts of Metal

(b) 18 parts of gold and 82 parts other metal

(c) 18 parts gold and 6 parts other metal

(d) 9 parts gold and 15 parts other metal

[SSC Sec off. Exam 2006]

Ans. (a)

Expl:- Standard 18 carat Gold Sold in Market Contains 82 parts Gold and 18 Parts of Metal.

34. German Silver contains following Metals –

(a) Copper, Zinc, Nickel

(b) Copper, Zinc, Silver

(c) Copper, Zinc, Aluminum

(d) Zinc, Silver Nickel

[SSC LDC Exam, 2005]

Ans. (a)

Expl:- German Silver Contains Following Metals–
Copper = 50%, Zinc = 35%, Nickel = 15%

35. German Silver used for making utensils is an alloy of–

(a) Copper Silver, Nickel
(b) Copper, Zinc, Nickel
(c) Copper, Zinc, Aluminum
(d) Copper, Nickel, Aluminum

Ans. (b) [SSC CPO Exam, 2007]

Expl:- Erman silver varies in composition, the percentage of the three elements ranging approximately as follows: copper, from 50% to 61.6%; zinc, from 19% to 17.2%; nickel, from 30% to 21.1%. The proportions are always specified in commercial alloys.

36. Which of the following is not contained by the German Silver?

(a) Copper (b) Nickel
(c) Silver (d) Zinc

Ans. (c) [SSC Section off. – 2007]

Expl:- German silver varies in composition, the percentage of the three elements ranging approximately as follows: copper, from 50% to 61.6%; zinc, from 19% to 17.2%; nickel, from 30% to 21.1%. The proportions are always specified in commercial alloys.

37. The process of depositing of a Layer of Zinc over water pipes for being protected from rusting is known as–

(a) Depositing a Layer of Zinc
(b) Formation of alloy
(c) Vulcanization
(d) Galvanization

Ans. (d)[SSC MTS Exam, – 2011, MTS – 1991, 2002, SSC CGL Exam, 2001]

Expl:- The process of depositing a Layer of Zinc over iron metal is called Galvanization. Iron having Layer of zinc over it known as Galvanized iron and thus iron prevents from rusting.

38. Which metal is used to Galvanize iron?

(a) Copper (b) Zinc
(c) Tin (d) Nickel

Ans. (b) [SSC CGL Exam, 2014]

Expl:- Galvanization (or galvanizing as it is most commonly called in that industry) is the process of applying a protective zinc coating to steel or iron, to prevent rusting. The most common method is hot-dip galvanizing, in which parts are submerged in a bath of molten zinc.

39. To protect the iron from getting rusted, the coat of zinc is applied on it. This process is known as–

(a) Galvanization (b) Reduction
(c) Corrosion (d) Calcinations

Ans. (a) [SSC CGL Exam, 2014]

Expl:- The protective Zinc Coating to steel or iron prevent from rusting and the process is known as Galvanization.

40. Ultra purification of a Metal is done by–

(a) Slugging (b) Leaching
(c) Zone Melting (d) Smelting

Ans. (c) [SSC CGL Exam, 2013]

Expl:- Ultra purification of Metal is done by zone Melting Method. In this Method narrow region of a crystal is Melted and this molten zone is moved along the crystal. It is mainly used in industry of semiconductor.

In the refinement of silicon and Germanium Level of purity in this Method is more than 99.99%. Silicon and Germanium are used on a Large scale in Transistor industry.

41. Glass is a –

(a) Super Heated Solid (b) Super Cooled Liquid
(c) Super Cooled Gas (d) Super heated Liquid

Ans. (b) [SSC CGL Exam, 2011, SSC Stenographer Exam 2005]

Expl:- Glass is a Non–Crystalline Solid. It is also known as Super Cooled Liquid because often from Liquid State glass converts in solid State and Solid State contains it all properties of Liquid State. Simple Glass is a Solid Solution of Silica, Sodium Silicate and Calcium Silicate. Glass is a super cooled Liquid in the form of a Non–Crystalline Solid so it does not have any crystalline Structure and does not have any fixed Melting point.

42. What is glass?

(a) Super Cooled Liquid (b) Crystalline Solid
(c) Liquid Crystal (d) None of these

Ans. (a) [SSC MTS Exam, – 2013, SSC CPO Exam, 2013]

Expl:- Glass is sometimes called a supercooled liquid because it does not form a crystalline structure, but instead forms an amorphous solid that allows molecules in the material to continue to move. However, Scientific American indicates that amorphous solids are neither supercooled.

44. Which of the following contains high content of Lead?

(a) Cool (b) Cooking Gas
(c) High octane fuel (d) Low octane fuel

Ans. (c) [SSC CPO Exam, 2013]

Expl:- High octane Fuel Content High amount of Lead

45. Which of the following is not favourable to prevent iron from rusting?

(a) Annealing (b) Applying grease
(c) Galvanization (d) Painting

Ans. (a) [SSC CGL Exam, 2013]

Expl:- To prevent iron from rusting Galvanization, painting and applying Grease is beneficial but annealing is done in glass. Annealing of glass is the process of slowly cooling hot glass once after they have been formed to relive internal stresses.

Which of the following is responsible for extra strength of Pyrex glass?

(a) Potassium carbonate
(b) Borax
(c) Ferric oxide
(d) Lead oxide

Ans. (b)

Expl:- Borax is responsible for extra strength for Pyrex Glass. Borax is used in the manufacturing of Pyrex Glass. Pyrex glass is introduced by corning Glass Works Company firstly.

Which one of the following metals does not react with water to produce hydrogen?

(a) Potassium (b) Cadmium
(c) Sodium (d) Lithium

Ans. (b) [SSC CPO Exam, 2009]

Expl:- All alkali metals reacts with water to produce Hydrogen because their ionization potential is lower than the ionization potential of Hydrogen, while cadmium has high ionization potential so, it cannot displace Hydrogen from water.

Which one of the following reacts with Fehling's solution?

(a) HCHO (b) C_2H_5OH
(c) CH_3COOH (d) CH_3COCH_3

Ans. (a) [SSC MTS Exam, – 2014]

Expl:- Carbon compounds of Aldehyde group react with Fehling's solution and HCHO is a compound of Aldehyde group.

Sodium vapor Lamps glow with yellow Light. This is due to–

(a) The low ionization Energy of Sodium
(b) Its ability of absorb all other colours except yellow.
(c) Sublimation of sodium to emit yellow colour
(d) The emission of excess energy absorbed by sodium atoms, in the yellow region of the spectrum.

Ans. (c) [SSC CHSL Exam, 2012]

Expl:- sublimation of sodium to emit yellow colour.. its ability to absorb all other colours except yellow.. the low ionisation energy of sodium.

The Element which does not occours in nature but can be formed, is–

(a) Thorium (b) Radium
(c) Plutonium (d) Uranium

Ans. (b) [SSC CHSL Exam, 2012]

Expl:- Radium does not available naturally. It is extracted from urinate in the form of Radium chloride by Merle and Pierre curie in 1898.

51. Which of the following elements behave chemically both as Metal and a Non-metal?

(a) Argon (b) Carbon
(c) Xenon (d) Boron

Ans. (d) [SSC CPO Exam, 2015]

Expl:- Boron behaves chemically both as Metal and a Non-Metal. It belongs to 13th group of periodic table.

52. Which of the following metal has maximum electrical conductivity?

(a) Copper (b) Aluminum
(c) Silver (d) Lead

Ans. (c) [SSC DEO Exam, 2008]

Expl:- Silver has maximum electrical conductivity and thermal conductivity order of conductivity is as follows
Silver → Copper → Aluminum → Lead

53. Illumination of Metal is caused by the –

(a) High density due to close packing of atoms
(b) Highly Polished
(c) Reflection of Light due to presence of free electrons
(d) Absorption of Light due to presence of sockets.

Ans. (c) [SSC CPO Exam, 2007]

Expl:- Cause of illumination of metals is the reflection of light due to the presence of free electrons.

54. Heavy metals got their names because compared to others atoms they have–

(a) Higher atomic mass (b) Higher atomic radii
(c) Higher densities (d) Higher atomic number

Ans. (c) [SSC CGL Exam, 2015]

Expl:- Heavy metals have higher densities as compare to Lighter metals. Metals having densities greater than $5g/cm^3$ are categorized as heavy metals. For Example → cadmium, copper, Lead etc.

55. Which of the following is most bad conductor?

(a) Iron (b) Lead
(c) Silver (d) Gold

Ans. (b) [SSC MTS Exam, – 2006]

Expl:- In metals Lead is most bad conductor, while gold, Silver and Iron are good conductors.

56. Bronze is an alloy of–

(a) Copper and zinc (b) Tin and Zinc
(c) Copper and Tin (d) Iron and Zinc

Ans. (c) [SSC CPO Exam, 2003, MTS – 2006]

Expl:- Bronze is an alloy of copper and tin. It consists of 88% of copper and 12% of tin. It is used in the manufacturing of doors, windows, sculptures and utensils.

57. Percentage of carbon in steel ranges from–

(a) 0.1 to 1.5 (b) 1.5 to 3.0
(c) 3.0 to 4.0 (d) 4.0 to 6.0

Ans. (a) [SSC Sec off. Exam; 2007]

Expl:- Steel contains around 98.9% of Iron and 0.1 to 1.5% of carbon. It is manufactured by the process Bessemer process, Siemens process and electric process. It is used for making blade, knife, utensils etc.

58. Shock absorbers are usually mode of steel as it?

(a) Is not brittle
(b) Has lower elasticity
(c) Has Higher elasticity
(d) Has no Higher elasticity

Ans. (c) [SSC CGL Exam, 2011]

Expl:- Shock absorbers are usually made of steel because steel has higher elasticity. Elasticity is the ability of an object to resume its normal shape after being stretched or compressed.

59. Identify the metal which is non-toxic in nature–

(a) Gold (b) Cadmium
(c) Cobalt (d) Chromium

Ans. (a) [SSC CHSL Exam, 2010]

Expl:- Gold is found in Free State in nature. It is a non-toxic metal

60. Which of the following metal is found in Free State in nature?

(a) Aluminum (b) Gold
(c) Iron (d) Lead

Ans. (b) [SSC MTS Exam, – 2011]

Expl:- Gold is found in Free State in nature. Ores of Gold are Calaverite, Salvanite and Krennerite. Ores of Aluminum are Bauxite, Kryolite, corundum etc and ores of Iron are Haematite, Iron Pyrite and Magnetite etc.

61. Most important ore of Lead is–

(a) Galena (b) Magnetite
(c) Pyrolusite (d) Siderite

Ans. (a) [SSC CHSL Exam, 2010]

Expl:- Galena (Pbs) and Anglesite (Pbcl2) are the ores of Lead.

62. Which of the purest commercial form of Iron?

(a) Pig Irons (b) Steel
(c) Stainless Steel (d) Wrought Iron

Ans. (d) [SSC CGL Exam, 2014]

Expl:- Wrought Iron is the purest commercial from of Iron, It is the purest ore of iron containing carbon around 0.04 to 0.08% which is less than even in the steel.

63. Which of the following is purest form of Iron?

(a) Steel (b) Cast Iron
(c) Wrought Iron (d) Pig iron

Ans. (c) [SSC CGL Exam, 2005, SSC FCI Exam, 20

Expl:- A tough malleable form of iron suitable for forging or rolling rather than casting, obtained by puddling pig iron while molten. It is nearly pure but contains some slag in the form of filaments.

64. The Percentage of carbon in cast iron is –

(a) 3 to 5 (b) 0.1 to 0.25
(c) 0.5 to 1.5 (d) 6 to 8

Ans. (a) [SSC CGL Exam, 20

Expl:- Depending upon the % of carbon Iron is of three type Cast iron, pig iron and Steel. Amount of (%) carbon present Cast iron, Pig Iron and Steel is 2 to 4%, 0.1 to 0.25% and 0.1 to 1.5 respectively.

65. Which one of the following is known as the brown coal

(a) Anthracite (b) Bituminous
(c) Coke (d) Lignite

Ans. (d) [SSC CHSL Exam, 20

Expl:- Quality of coal depends upon the amount of carbon present in it. Due to the High temperature and pressure in earth cast peat coal (Less than 50% carbon) formed, then lignite coal (60–70% Carbon) formed, Bituminous coal (60-80% carbon) and then of Best quality of coal Anthracite (85-90% carbon). Lignite coal known as Brown.

66. Which one of the following is not a coal variety?

(a) Bituminous (b) Lignite
(c) Peat (d) Dolomite

Ans. (d)

Expl:- What is the use of dolomite?

Dolomite is a common rock-forming mineral. It is a calcium magnesium carbonate with a chemical composition of $CaMg(CO_3)_2$. It is the primary component of the sedimentary rock known as dolostone and the metamorphic rock known as dolomitic marble. Limestone that contains some dolomite is known as dolomitic limestone.

67. The Iron ORE which contains 72% of Iron is –

(a) Magnetite
(b) Limonite
(c) Hematite
(d) Siderite

Ans. (a) [SSC FCI Exam, 20

Expl:- Percentage of Iron indifferent iron ores are given as follows

Hematite (Fe_2O_3) – 70%

Magnetite (Fe_3O_4) – 72%

Limonite ($Fe_2O_3+H_2O$) – 55 – 66%

Siderite ($FeCO_3$) – 48%

Magnetite is –

(a) Fe_2O_3 (b) Fe_3O_4

(c) Fe_2CO_3 (d) $2Fe_2O_3.3H_2O$

Ans. (b) [SSC CGL Exam, 2014]

Expl:- Magnetite is a mineral and one of the main iron ores. With the chemical formula Fe_3O_4, it is one of the oxides of iron. Magnetite is ferrimagnetic; it is attracted to a magnet and can be magnetized to become a permanent magnet itself.

Which one of the following is an iron ore?

(a) Bauxite (b) Magnetite

(c) Lignite (d) Nitrite

Ans. (b) [SSC Steno Exam, 2011]

Expl:- Bauxite → Aluminum ore

Lignite → A type of Coal

Magnetite → Iron ore

Nitrite → No_{2g} (ion)

Which one of the following Mineral does not contains oxygen?

(a) Hematite (b) Bauxite

(c) Cryolite (d) Calcite

Ans. (c) [SSC CHSL Exam, 2014]

Expl:- Cryolite ($[Na_3AlF_6]$) mineral does not contain oxygen. Calcite ($CaCO_3$) contains carbon, oxygen and calcium. Bauxite ($[Al(OH)_3]$) contains Aluminum, oxygen and Hydrogen. Na_3AlF_6 is sodium Hexa Fluoro aluminates.

Which metal is protected by the layer of its own oxide?

(a) Silver (b) Iron

(c) Aluminum (d) Calcium

Ans. (c) [SSC CHSL Exam, 2012]

Expl:- Aluminum is the metal which protects itself by the rusting with its own layer of oxide.

The ore only two metals that are Non–Silver in colour, they are–

(a) Nickel and Zinc

(b) Copper and gold

(c) Palladium and Platinum

(d) Sodium and Magnesium

Ans. (b) [SSC CHSL Exam, 2015]

Expl:- From the given options only gold and copper are non-silver in colour. Gold is of Golden and Copper is Reddish Brown Colour.

73. Siderite is an ore of–

(a) Copper (b) Aluminum

(c) Tin (d) Iron

Ans. (d) [SSC CHSL Exam, 2015]

Expl:- Siderite is an ore of Iron. Chemical formula of siderite is $FeCO_3$ (Iron Carbonate)

74. The Soft Silvery Metallic element which ionizes easily when heated or exposed to Light and it present in atomic clocks is –

(a) Californium (b) Cesium

(c) Calcium (d) Cerium

Ans. (b) [SSC CGL Exam, 2015]

Expl:- Cesium has least melting points from the given Metals and is easily ionized when exposed to Light. It is also used in atomic clocks.

75. Match the following –

Alloy	Composition
A. Bronze	1. Lead, Tin, Antimony
B. Brass	2. Copper, Zinc, Nickel
C. German Silver	3. Copper, Zinc
D. Typing Metal	4. Copper, Tin

	A	B	C	D
(a)	1	4	3	2
(b)	2	1	4	3
(c)	3	2	1	4
(d)	4	3	2	1

Ans. (d) [SSC CPO Exam, 2012]

Expl:- Bronze – Copper, Tin

Brass – Copper, Zinc

German silver – Copper, Zinc, Nickel

Typing metal – Lead, Antimony, Tin

76. Which of the following process is used in the extraction of iron from the Iron ore?

(a) Oxidation

(b) Reduction

(c) Electrolytic decomposition

(d) None of these

Ans. (b) [SSC CHSL Exam, 2012]

Expl:- Extraction of Iron is based upon the reduction of Hematite (Fe_2O_3).

77. **Which one of the following metals cannot be used as an electromagnet?**

(a) Iron (b) Copper
(c) Nickel (d) Cobalt

Ans. (b) [SSC MTS Exam, – 2008]

Expl:- Iron, Nickel and Cobalt are Magnetic Materials so these can be used as electromagnet but copper cannot be used as electromagnet.

78. **Quartz is a type of –**

(a) Silicon dioxide (b) Sodium Silicate
(c) Aluminum oxide (d) Magnesium Carbonate

Ans. (a) [SSC CGL Exam, 2006]

Expl:- Quartz is the crystalline form of silicon dioxide. It is used as a transducer.

79. **Raw materials used in the manufacturing of glass are–**

(a) Soda, Lime Stone Silica Sand ash
(b) Charcoal, silica sand soda ash
(c) Lime stone, charcoal, sulphur
(d) Silica Sand, Sulphur, Soda ash

Ans. (a) [SSC FCI Exam, 2012]

Expl:- Soda ash, Lime Stone and silica sand all shacked and heated in rotating furnace at 1400°C temperature. At this temperature mixture of these solid metals and cool down slowly and becomes glass as a super cooled Liquid.

80. **Ruby and sapphire are the oxides of –**

(a) Copper (b) Tin
(c) Iron (d) Aluminum

Ans. (d) [SSC CGL Exam, 2008]

Expl:- Ruby and Sapphire are the oxides of Aluminum.

81. **Which of the following is used in welding broken pieces of iron rails and parts of machine –**

(a) Aluminum Sulphate (b) Solder
(c) Aluminum Powder (d) None of these

Ans. (c) [SSC FCI Exam, 2012]

Expl:- Aluminum Powder is used in welding broken pieces of iron rail and Machine parts.

82. **Which one of the following does not present in the Stainless Steel?**

(a) Iron (b) Tungsten
(c) Chromium (d) Nickel

Ans. (b) [SSC DEO Exam, 2009]

Expl:- Steel is an alloy of iron and carbon (0.2% to 2.1%). In stainless steel is anticorrosion, it contains 8% to 10% of Nickel and 12% to 18% of chromium. It is used in the manufacturing of Utensils and surgical instruments. Stainless steel does not contains Tungsten.

83. **Stainless Steel is an alloy of –**

(a) Chromium and Carbon
(b) Chromium and iron
(c) Chromium, carbon and iron
(d) Chromium and iron

Ans. (c) [SSC FCI Exam, 20

Expl:- Stainless steel is an alloy of chromium and iron.

84. **Hard Steel contains –**

(a) 2 to 5% of carbon
(b) 0.5 to 1.5% of carbon
(c) 0.1 to 0.4% of carbon
(d) 0.01 to 0.04% of carbon

Ans. (b) [SSC CGL Exam, 20

Expl:- Steel containing carbon 0.1 to 0.4% known as mild ste while steel having carbon 0.5 to 1.5% called hard steel.

85. **The addition of Gypsum to Portland cement helps in-**

(a) Increasing the strength of cement
(b) Rapid settling of cement
(c) Preventing rapid settling of cement
(d) Reduction in the cost of cement

Ans. (c) [SSC CGL Exam, 20

Expl:- In Portland cement Gypsum ($CaSO_4.2H_2O$) is added t control the rapid setting of cement.

86. **Who discovered cement?**

(a) Agassit (b) Albertus Magnus
(c) Joseph Aspdin (d) Jonseen

Ans. (c) [SSC CGL Exam, 20

Expl:- Cement is discovered by Joseph aspdin in 1824 h named his cement Portland after a rock quary that Produced ver strong Stone found at British's Coastal area.

87. **Air pollution by "Fly Ash" is caused by-**

(a) Fertilizer plant
(b) Coal Combustion in thermal power plant
(c) Cement industry
(d) Floor Mill

Ans. (c) [SSC CPO Exam, 20

Expl:- Portland cement contains 35% of fly ash, which cause air Pollution.

88. **Cement is formed by strongly heating a Mixture of-**

(a) Lime stone and Graphite
(b) Lime Stone and clay
(c) Chalk and Graphite
(d) Clay and Graphite

[SSC CGL Exam, 2011]

Ans. (b)

Expl:- Cement is a mixture of compounds silicates of calcium and Aluminates, which is formed by calcium oxide, silica, Aluminum oxide and iron oxide. For the formation of cement limestone and clay mixture is heated at a High temperature in furnace. Then, this mixture is grind in powdered form with Addition of Gypsum and thus the final product formed known as Portland cement.

Cement is a mixture of –

(a) Calcium Silicate and calcium aluminates
(b) Calcium Silicate and Ferrite
(c) Calcium aluminates and calcium Ferrite
(d) Lime Stone and Silicon dioxide.

Ans. (a) [SSC FCI Exam, 2012]

Expl:- Composition. Portland cement consists essentially of compounds of lime (calcium oxide, CaO) mixed withsilica (silicon dioxide; SiO2) andalumina (aluminum oxide, Al 2O 3). The lime is obtained from a calcareous (lime-containing) raw material, and the other oxides are derived from an argillaceous (clay-ey) material.

Which one of the following Metals is used to Heat up the electric iron?

(a) Copper (b) Tungsten
(c) Nichrome (d) Tin

Ans. (c) [SSC MTS Exam, – 2011]

Expl:- Electric iron contains High resistance metal Nichrome as a Heating element striped insulated by Mica. It does not melt even at very High temperature. When current passes through Nichrome wire then its outer covering heated up and irons the cloth.

Which of the following is strongest coagulant?

(a) Zinc Chloride (b) Aluminum Chloride
(c) Barium Chloride (d) Magnesium Sulphate

Ans. (b)

Expl:- Aluminum chloride is strongest coagulant order of increasing coagulating effect is given as follows

$Na^+ < Mg^{++} < Al^{+++}$

The Base used as an antacid is –

(a) Calcium Hydroxide
(b) Barium Hydroxide
(c) Magnesium Hydroxide
(d) Silver Hydroxide

Ans. (c) [SSC CGL Exam, 2012]

Expl:- Magnesium Hydroxide is used as an antacid, it neutralize the acidity of stomach.

Which of the following metal is found in Free State?

(a) Copper (b) Iron
(c) Tin (d) Lead

Ans. (a)

Expl:- Copper is found in both States Free and combined. It is a transition element. Early Man First of all use copper Metal.

94. Which one of the following is used in Pencils?

(a) Charcoal (b) Graphite
(c) Sulphur (d) Phosphorus

Ans. (b) [SSC CGL Exam, 2014]

Expl:- Graphite is used in the making of Pencils. It is the allotrope of carbon.

95. In Graphite layers are held together by–

(a) Vander wall forces (b) Metallic bond
(c) Ionic bond (d) Covalent bond

Ans. (a) [SSC CHSL Exam, 2012]

Expl:- In graphite Layers are Held together by Vander walls forces. These are weak attractive forces between atoms or non–polar Molecules caused by the temporary change in dipole moment arising from a brief shift of orbital electrons to the one side of atom or molecule. It is named after dutch scientist Johannes Diderik Van Vander Wall.

96. Which one among the following is Lubricant?

(a) Germanium (b) Sulphur
(c) Graphite (d) Indium

Ans. (c) [SSC CHSL Exam, 2012]

Expl:- Solid Lubricants are the substances, which the friction between two Layers due to their solid State. Graphite, Tungesten di sulphide, Malybdenum di sulphite are important solid Lubricants.

97. Diamond is Harder than Graphite because of–

(a) Difference of Layers of atom
(b) Tetrahedral Structure of diamond
(c) Difference of crystalline structure
(d) None of these

Ans. (c)

Expl:- In diamond the 4 valence electrons of a carbon atom forms covalent bond and form tetrahedron structure due to SP3 Hybgives strength to the diamond so its M.P. is very High Because More energy is required to break the bonds. Structure of diamond study by x-rays.

98. One carat of Diamond is equal to–

(a) 100 mg (b) 150 mg
(c) 200 mg (d) 250 mg

Ans. (c) [SSC CHSL Exam, 2011]

Expl:- One carat of Diamond is equal to 200 mg.

99. Which of the following are properties is generally found in non-metals?

(a) Brittleness (b) Conductivity
(c) Ductility (d) Malleability

Ans. (a) [SSC CHSL Exam, 2011]

Expl:- Brittleness is the General characteristics of solid Non-Metals. There is a tabular arrangement of chemical element in the periodic table. Periodic table has three main categories (i) Metals (ii) Non-Metals (iii) Sub-metals

100. What is wood spirit?

(a) Methyl Alcohol (b) Ethyl Alcohol
(c) Butyl Alcohol (d) Propyl Alcohol

Ans. (a) [SSC CHSL Exam, 2011]

Expl:- Methyl Alcohol or Methanol (CH_3OH) is known as wood spirit.

101. Fire-Fighting cloths are made from–

(a) Mica (b) Asbestos
(c) Talc (d) Steatite

Ans. (b) [SSC CHSL Exam,2011]

Expl:- Fire-Fighting Cloths are made from Asbestos.

102. The Gas Causes acid rain in an industrial area is–

(a) Sulphur dioxide (b) Methane
(c) Carbon dioxide (d) Carbon Monoxide

Ans. (a) [SSC CHSL Exam, 2013]

Expl:- Acid rain in an industrial area is caused due to evolution of sulphur dioxide (SO_2) and Nitrogen oxide (NO_2). These gases react with water in atmosphere to form acid.

103. Acid rain in the environment is caused by the Higher concentration of –

(a) CO and CO_2 (b) SO_2 and NO_2
(c) Ozone and dust (d) H_2O and CO

Ans. (b) [SSC FCI Exam, 2012]

Expl:- In the earth's atmosphere SO_2 (Sulphure dioxide) and (NO_2) Nitrogen oxide react with water and forms sulphuric acid and Nitric acid respectively, which causes acid rain.

104. Which one of the following is used to dissolve noble metals?

(a) Nitric acid (b) Hydrochloric acid
(c) Sulphuric acid (d) Aqua regia

Ans. (d)

Expl:- Noble metals are those Metals which do not react with oxygen (O_2), water (H_2O) etc. to dissolve them solution of aqua regia is used. Aqua regia contains HCL and HNO_3 in 3:1 amount.

HCL → Hydrochloric acid

HNO_3 → Nitric acid.

105. Aqua regia is a Mixture of the following in the ratio 1:3 by volume–

(a) Conc HNO_3 and conc CHL
(b) Conc HNO_3 and Conc H_2So_4
(c) Dil HCL and Conc HNO_3
(d) Conc HCL and Conc HNO_3

Ans. (a)

Expl:- Aqua regia is a Mixture of HNO_3 and Conc HCL. These acids are Mixed in ratio 1 : 3 by volume. It is also called king of acids because it can dissolve noble metals such as gold and Platinum in it.

106. Sulphuric acid is –

(a) Monobasic (b) Dibasic
(c) Tribasic (d) Tetra basic

Ans. (b) [SSC CHSL Exam, 2013]

Expl:- Monobasic – HCL
Tribasic – H_3PO_4
Dibasic – H_2SO_4

107. Fullerene is a newly discovered crystalline carbon allotrope, contains–

(a) 100 C atoms (b) 80 C atoms
(c) 60 C atoms (d) 40 C atoms

Ans. (c) [SSC CHSL Exam, 2012]

Expl:- Fullerene (C60) is an allotrope of carbon, it is also called Buckminster fullerene. It is in the form of a Hollow sphere. It was discovered by Richard Smalley and his coworkers in 1995 and in 1996, he was Awarded by Noble Prize for This discovery.

108. Catalytic Converters are Generally Made from –

(a) Hydrogen (b) Carbon
(c) Transition Metals (d) Alkaline Metals

Ans. (c) [SSC CGL Exam, 2017]

Expl:- Catalytic converters are generally made from Transition Metals mainly from Platinum, Palladium and Rhodium. Even Platinum is very reactive catalyst and widely used but due to very High cost it can't be used at all occasions. Rhodium is used in reduction and Palladium is used in oxidation as a catalyst.

STATES OF FLUID AND WATER

1. Size of suspended particles lies between–

(a) 10–2 – 10–4 A° (b) 10–5 – 10–7 A°
(c) 10–8 – 10–10 A° (d) 10–1 – 10–2 A°

Ans. (b) [SSC MTS Exam, 2017]

Expl:- Size of suspended particle Lies between 10–5 – 10–7 A°

2. An Emulsion is a colloid of a –

(a) Gas in a Liquid (b) Liquid in a Liquid

(c) Liquid in a Gas (d) Gas in a Solid

[SSC Sec. Off – 2007]

Ans. (b)

Expl:- Emulsion is a colloid of a Liquid into a Liquid such as milk, Emulsified oil etc.

3. **Milk is a –**

(a) Emulsion (b) Suspension

(c) Gel (d) Sol

[SSC CHSL Exam, 2011]

Ans. (a)

Expl:- An emulsion is a suspension of droplets of one liquid into another liquid. Milk is an emulsion of fat in water. Butter is an emulsion of water in fat. The solute is known as the dispersed phase and the solvent is known as the continuous phase.

4. **A colloidal system in which a Liquid is dispersed in a Liquid is called –**

(a) Gel (b) Emulsion

(c) Sol (d) Precipitate

[SSC CGL Exam, 2013]

Ans. (b)

Expl:- When a Liquid as disperse phase is mixed in Liquid as dispersion medium then it's known as emulsion eg. → Milk, Soft drink

5. **Match the following –**

	Process		Change
A.	Evaporation	1.	Liquid to Gas
B.	Melting	2.	Solid to Liquid
C.	Freezing	3.	Solid to Gas
D.	Sublimation	4.	Liquid to Solid

	A	B	C	D
(a)	1	2	4	3
(b)	3	1	2	4
(c)	2	1	4	3
(d)	2	1	3	4

Ans. (a) [SSC CHSL Exam, 2011]

Expl:-

- Evaporation → Liquid to gas
- Sublimation → Solid to Gas directly
- Freezing → Liquid to Solid
- Melting → Solid to Liquid
- In evaporation Liquid changes into vapors (Gas)
- In sublimation solid directly changes into vapor without forming the any intermediate product as Liquid.
- In freezing Liquid change into solid (Remove Condensation from Here)
- In melting, Solid gets melted and converted in Liquid.

6. **Which of the following Statements is not true regarding covalent compounds?**

(a) Compounds are Generally Liquids and Gases

(b) Melting and Boiling points are low

(c) Slow reaction

(d) Fast Reaction.

Ans. (d) [SSC CPO Exam, 2012]

Expl:- Covalent compounds have following Characteristics.

1. Compounds are generally Liquids and Gasses
2. Compounds have low melting points and Boiling point
3. Reaction takes place at very slow rate.

7. **A gas thermometer is more sensitive than a Liquid thermometer because a gas–**

(a) Is lighter than Liquid

(b) Expands more than a Liquid

(c) Is easy to obtain

(d) Does not change state easily

Ans. (b) [SSC CPO Exam, 2012]

Expl:- Mercury thermometer is the Example of the Liquid thermometer. Hydrogen is used in Gas thermometer. Hydrogen can used to measure the temperature upto 500°C. Nitrogen thermometer is used to measure the temperature from 500 to 1500°C. Gas thermometer are more sensitive than Liquid thermometer because Gas expand more than Liquid.

8. **Hydrogen Peroxide is an effective Sterilizing agent which one of the following product result when it readily loses active oxygen?**

(a) Water (b) Hydrogen

(c) Ozone (d) Nasant hydrogen

Ans. (a)

Expl:- Hydrogen peroxide is an effective sterilizing agent, when active oxygen disappears from it, then it forms water.

$2H_2O_2 \rightarrow 2H_2O + O_2$

9. **Nitrogen has Higher ionization energy than oxygen because in Nitrogen there is–**

(a) Small atomic radii

(b) High Nuclear Charge

(c) Half Filled Stable configuration in 2p orbital

(d) High Bond breaking energy

Ans. (c) [SSC CHSL Exam, 2013]

Expl:- Nitrogen has electronic configuration is its outermost shell 2S22P3. In this 2P sub shell is half filled and considered as stable so Nitrogen has more ionization energy than oxygen.

10. **In deep see diving, divers use a mixture of gases consisting of oxygen and–**

(a) Argon (Ar) (b) Helium (He)

(c) Nitrogen (N) (d) Hydrogen (H)

Ans. (c) [SSC MTS Exam, – 2014]

Expl:- In deep sea water divers used a mixture of oxygen and Nitrogen known as Nitrox.

11. The Gas dissolved in water that makes it basic is?

(a) Hydrogen (b) Carbon dioxide
(c) Sulphur dioxide (d) Ammonia

Ans. (d) [SSC CHSL Exam, 2015]

Expl:- Dissolved ammonia (NH_3) in water makes it basic. Polar characteristics of ammonia and its tendency to form bonding shows its High Solubility in water. In aqueous Solution Ammonia act as a base and form Hydroxyl and Ammonium ion.

$NH_3 + H_2O \Leftrightarrow NH^{4+} + OH^-$

12. Which metal is extracted from Sea water?

(a) Potassium (b) Aluminum
(c) Magnesium (d) Beryllium

Ans. (c) [SSC Sec. Off. Exam 2007]

Expl:- Magnesium is extracted from sea salts $MgCl_2$–$6H_2O$ by Dow Process. It is used in making ELEKTRON Alloy (95% Mg+5% Zn) and Magnalium (1–15% mg + 85–99% Al)

13. The Physical method Commonly used to purify Sea water is–

(a) Filtration (b) Evaporation
(c) Sedimentation (d) Distillation

Ans. (d) [SSC Steno Exam, 2012]

Expl:- Distillation method is used commonly to purify sea water.

14. Sea water can be purified by the Process of–

(a) Distillation (b) Evaporation
(c) Filtration (d) Fractional distillation

Ans. (a) [SSC CPO Exam, 2008]

Expl:- Distillation is a process of separating the component or substances from a liquid mixture by selective evaporation and condensation.

15. Which of the following can be found as pollutants is the drinking water in some parts of India.

1. Arsenic 2. Orbital
3. Fluoride 4. Formaldehyde
5. Uranium

(a) 2, 4 and 5 (b) 1 and 3
(c) 1, 2, 3, 4 and 5 (d) 1, 3 and 5

Ans. (b) [SSC CGL Exam, 2015]

Expl:- Generally the water we drink contains a lot of chemical impurities. In some parts of India water pollutions are found in drinking water are Arsenic, Fluoride and uranium (in Punjab) etc.

16. Soda water contains –

(a) SO_2 (b) NO_2
(c) H_2 (d) CO_2

Ans. (d) [SSC CGL Exam, 2014]

Expl:- Soda water contains carbon dioxide.

17. Which of the following is used for making smoke bombs?

(a) Sulphur (b) Phosphorus
(c) Hydrogen (d) Carbon

Ans. (b) [SSC CGL Exam, 2005]

Expl:- Phosphorus is used in the making of smoke bombs. It is also used in making match box, crackers and explosive materials.

18. Which one of the following has highest value of specific heat?

(a) Glass (b) Copper
(c) Lead (d) Water

Ans. (d) [SSC DEO Exam, 2008]

Expl:- From the given options water has highest value of specific heat. Its value is 1 Cal/g °C or 4.186 J/g °C.

19. A Liquid is said to be boiled when its–

(a) Vapor pressure becomes zero.
(b) Vapor pressure is greater than the surrounding pressure.
(c) Vapor pressure is less than the surrounding pressure.
(d) Vapor pressure is equal to the surrounding pressure.

Ans. (d) [SSC CPO Exam, 2012]

Expl:- A Liquid starts boiling when its vapor pressure becomes equal to the surrounding pressure.

20. Hygroscopic objects are those which instantly absorb–

(a) Hydrogen sulphide
(b) Carbon monoxide
(c) Ammonia
(d) Water vapors

Ans. (d) [SSC MTS Exam, – 2014]

Expl:- Hygroscopic substance is those which absorb humidity (water vapors) from their surrounding instantly, such as sugar, Honey, ethanol etc.

21. Quantity (Amount) of water vapors present in atmosphere is measured in –

(a) In the form of Humidity
(b) In the form of Smog and Fog
(c) In the form of Nodes
(d) All of these

Ans. (a) [SSC FCI Exam, 2012]

Expl:- Humidity is the amount of water vapors present in the atmosphere.

22. **Production of alcohol from organic compounds by micro-organism is known as–**

(a) Annerobic respiration
(b) Aerobic respiration
(c) Combustion
(d) Fermentation

Ans. (d) [SSC CHSL Exam, 2012]

Expl:- The process of conversion of carbon compounds (Organic) in alcohol by Micro organism is called fermentation.

23. **Spirit in Contact with body gives cool sensation because it is –**

(a) A Liquid (b) A conductor
(c) A transparent (d) Highly volatile

Ans. (d) [SSC Steno– 2010]

Expl:- Spirit gives cooling sensation in contact with body because it is Highly Volatile and evaporates the water from body.

24. **Cloud is a colloidal of –**

(a) Air in a dispersion medium of water
(b) Fog in a dispersion medium of water
(c) Mist is a dispersion medium of air
(d) Water drop in a dispersion medium of air.

Ans. (d) [SSC CGL Exam, 2005]

Expl:- Cloud is a colloidal dispersion of water drop in a dispersion medium of air. Cloud consist of small water drops and after some time these drops combined together and condense to form clouds but due to very small from ties velocity they appears as clouds in the sky.

25. **Light Scattering take place in –**

(a) Colloidal solution (b) Acidic Solution
(c) Basic Solution (d) Electrolytic Solution.

Ans. (a) [SSC CGL Exam, 2013]

Expl:- In a colloidal solution size of particle Lies between 1 nm–1000 nm. These particles causes scattering of Light Scattering of Light can be observed by the Ultra microscope. Known as Tyndall effect.

26. **What is the fourth State of Matter?**

(a) Gas (b) Vapor
(c) Plasma (d) Electron

Ans. (c) [SSC CGL Exam,2005]

Expl:- There are mainly three states of matter solid, Liquid and Gas, but fourth state is known as Plasma (colloidal).

27. **Muddy water is treated with alum in Purification process–**

(a) Coagulation (b) Absorption
(c) Emulsification (d) Adsorption

Ans. (a) [SSC CGL Exam,2015]

Expl:- By Coagulation process Muddy water converted into clean water. Alum is added to muddy water, then by coagulation, Flocculation and sedimentation we get clean water.

28. **Alum is used for the water treatment in the process named–**

(a) Coagulation (b) Peptizatio
(c) Softening (d) Electro osmosis

Ans. (a) [SSC FCI Exam, 2012]

Expl:- Alum is used in the process coagulation. Its chemical name is Potassium aluminate sulphate $[K_2So_4.Al_2 (So_4)^3 - 24H_2O]$

29. **Which of the following is used to Purify the muddy water?**

(a) Common salt (b) Potash alum
(c) Aluminum Powder (d) Bleaching Powder

Ans. (b) [SSC Sec. off Exam, 2006]

Expl:- Potash alum is used for the coagulation of muddy water

30. **Suspended colloidal particles in water can be removed by the process of –**

(a) Filtration (b) Absorption
(c) Adsorption (d) Coagulation

Ans. (d) [SSC CHSL Exam, 2012]

Expl:- In water treatment, Coagulation occurs when a coagulant is added to water. Here Potash Alum is added to water to remove Sand, Soil and Colloidal impurities. Alum dissociates into k^+ Al^{3+} and So^{4-}. In this Al^{3+} coagulate the negatively charged colloidal impurities.

31. **Alum stops bleeding in a minor cut because of–**

(a) Salvation (b) Emulsion
(c) Dialysis (d) Coagulation

Ans. (d) [SSC Tax Asst. Exam, 2006]

Expl:- Alum stops bleeding in a minor cut. Its chemical name is potassium aluminum sulphate. Its stops bleeding because of coagulation.

32. **What is the meaning of Reader in waste water treatment process?**

(a) Container (b) Essayist
(c) Aeration tank (d) Filtration tank

Ans. (a) [SSC CGL Exam,2013]

Expl:- Reactor means container in a waste water treatment plant.

33. **Iodine can be separated from a mixture of Iodine and potassium chloride by–**

(a) Filtration (b) Sublimation

(c) Distillation (d) Sedimentation

Ans. (b) [SSC CHSL Exam, 2010]

Expl:- Iodine can be separated from a mixture of Iodine and potassium chloride by the process of sublimation.

34. The effect or response produced by two or more chemicals are less than the sum of the effects or response that the chemical would produce individually known as –

(a) Antagonism (b) Independent

(c) Additive (d) Synergism

Ans. (a) [SSC CGL Exam, 2013]

Expl:- In chemistry, antagonism is a phenomenon wherein two or more agents in combination have an overall effect that is less than the sum of their individual effects.

35. Water does not evaporate, if–

(a) Temperature is Less than 0°C

(b) Humidity is 0%

(c) Humidity is 100%

(d) Temperature is 100°C

Ans. (c) [SSC Stenographer Exam, 2011]

Expl:- It Humidity is 100% in atmosphere, then water will not boil because in 100%. Humidity amount of water vapors in atmosphere reaches to its maximum value and possibility of evaporation becomes zero.

36. The amount of chlorine available in water after disinfection called as –

(a) Free Chlorine

(b) Residual chlorine

(c) Free available chlorine

(d) Combined available chlorine

Ans. (b) [SSC Tax Asst. Exam, 2008]

Expl:- Amount of chlorine available in water after disinfection is called Residual chlorine.

37. What will be the form of Nitrogen in sewage water is completely oxidized?

(a) Nitrite (b) Ammonia

(c) Nitra mine (d) Nitrate

Ans. (d) [SSC MTS Exam, – 2013]

Expl:- If sewage water is completely oxidized then Nitrogen gets converted into nitrates.

38. When water itself combines chemically with some element or mineral it is called–

(a) Carbonation (b) Desalination

(c) Oxidation (d) Hydration

Ans. (d) [SSC CHSL Exam, 2012]

Expl:- When water itself combines chemically with some element or mineral then it is known as Hydration.

39. The unit of ionic Product of water (kw) is–

(a) $Mol^2\ ltr^{-1}$ (b) $Mol^2\ ltr^{-2}$

(c) $Mol^{-1}\ ltr^2$ (d) $Mol^{-1}\ ltr^{-1}$

Ans. (b) [SSC CHSL Exam, 2010]

Expl:- At a definite temperature ionic product of concentration of H+ ions and OH– (Hydroxide Ions) in pure water and in dilute aqueous solution and definite, which is known as ionic product of water at normal temperature (25°C) as value is 10–14 $mol^2\ ltr^{-2}$.

40. The mass of 10 mol of water is–

(a) 18g (b) 180g

(c) 90g (d) 45g

Ans. (b) [SSC CGL Exam, 2012]

Expl:- Mass of 1 mol of water is 18g Q $H_2O \rightarrow 1 \times 2 + 16 = 18g$

$\therefore$ mass 10 mol of water $= 10 \times 18 = 180g$

41. Which one of the following Liquid has least density?

(a) Clean water (b) Salt water

(c) Petrol (d) Mercury

Ans. (c) [SSC PO Exam, 2009]

Expl:- From the given options petrol has least density.

Liquid →	Clean water	Salt water	Petrol	Mercury
Density (gm/cm3) →	1.00	1.03	0.71	13.53

42. Impure camphor is purify by the process–

(a) Sublimation (b) Filtration

(c) Sedimentation (d) Evaporation

Ans. (a) [SSC CPO Exam, 2006]

Expl:- Sublimation is the process in which solid directly changes into gaseous state, without forming any Liquid State. In the inner sublimation tube, there will be pure camphor. In the principle the operation resemble purification by distillation except that the product do not pass the through the Liquid State.

43. Which one of the following is not a mixture–

(a) Air (b) LPG

(c) Gasoline (d) Distilled water

Ans. (d) [SSC DEO Exam, 2009]

Expl:- Distilled water is the purest form of water, while air, gasoline and LPG is mixture.

44. Heavy water means–

(a) Water which is used in heavy industries.

(b) Distilled water

(c) Water containing Maximum density

(d) Water containing salts of calcium and Magnesium

Ans. (c) [SSC CPO Exam, 2009]

Expl:- Heavy water is that water, which contains maximum density. It contains 11% more density than simple water but physically and chemically is same as simple water. It is used as a moderator in nuclear reactors.

45. What is the chemical composition of Heavy Water?

(a) H_2O (b) HDO

(c) D_2O (d) H_2O_2

Ans. (c) [SSC GD – 2015]

Expl:- Heavy water is a form of water that contains a larger than normal amount of the hydrogen isotope deuterium, rather than the common hydrogen-1 isotope that makes up most of the hydrogen in normal water.

46. An Sinksin soft water but floats in a concentrated solution of salt water because–

(a) Egg absorb Salt from the solution and expands

(b) Albumin dissolves in Salt Solution and egg becomes Lighter

(c) The Density of Salt Solution exceeds the density of eggs

(d) Water has High surface tension.

Ans. (c) [SSC CGL Exam, 2008]

Expl:- An Egg sinks in soft water but float in a concentrated solution of salt because the density of salt solution exceeds the density of egg.

47. The gas which turns into Liquid at the Lowest temperature among the following is–

(a) Hydrogen (b) Oxygen

(c) Helium (d) Nitrogen

Ans. (a) [SSC CGL Exam, 2008]

Expl:- At Lowest temperature Hydrogen turns into Liquid.

48. Which one of the following is the best fuel in terms of energy released per gram of fuel?

(a) Hydrogen (b) Methane

(c) Ethanol (d) Butane

Ans. (a) [SSC CHSL Exam, 2011]

Expl:- Hydrogen is the best fuel is terms of energy released per gram of fuel.

Fuel	Hydrogen	Methane	Ethanol	Butane (LPG)
Energy Per gram of released Fuel (Joule/gram)	64186	55600	30000	49100

49. The High Boiling Point of water compared to Hydrogen Sulphide or Hydrogen Chloride is due to –

(a) Dipole Insulation

(b) Hydrogen bonding

(c) Polar covalent bonding

(d) Vander wall's attraction

Ans. (b) [SSC CGL Exam,2012]

Expl:- Boiling Point of water is high due to Hydrogen bonding.

50. Heating of ore in the absence of air below its melting point is called–

(a) Leaching (b) Roasting

(c) Smelting (d) Calcinations

Ans. (d) [SSC CHSL Exam, 2013]

Expl:- In this process carbonate, Hydroxide or oxide ores are heated frequently in the absence of air.

51. Which one of the following substances is highly plastic?

(a) Quartz (b) Mica

(c) Granite (d) Clay

Ans. (d) [SSC Tax Asst Exam, 2009]

Expl:- The Objects which regain their original configuration completely after removing the deforming force are known as perfectly elastic body. And the objects which do not regain their original configuration completely and gets permanently deformed are called perfectly plastic. In real there is no perfectly plastic and no perfectly elastic body, even all object lies between the border line of perfectly elastic and perfectly plastic. But often quartz can take as perfectly elastic and wax and clay can consider as perfectly plastic.

52. Stalactites and Stalagmites forms due to the precipitation of–

(a) $Mgcl_2$ (b) $Cacl_2$

(c) $Caco_3$ (d) $Mgco_3$

Ans. (d) [SSC CHSL Exam, 2015]

Expl:- Calcite is the most abundant Mineral on the earth. Chemically it is known as calcium carbonate.

Due to precipitation of calcite stalactites and stalagmites are formed.

53. Water can be separated from the mixture of water-Alcohol by the process–

(a) Decantation (b) Evaporation

(c) Sublimation (d) Distillation

Ans. (d) [SSC Tax Asst Exam, 2006]

Expl:- Water can be separated by the mixture of alcohol-water by the process of distillation.

54. Iron and Manganese are removed by the process of–

(a) Chlorination

(b) Filtration

(c) Lime Soda treatment

(d) Aeration

Ans. (b)

Expl:- Filtration is the mechanical or physical operation which is used for separation of solids from fluids by interposing a medium through which only the fluid can pass and oversized solids in the fluid are retained.

55. What changes will happen to a bowl of ice and water kept at exactly zero degree Celsius?

(a) All ice will melt

(b) All water will become ice

(c) No change will happen

(d) Only some ice melts

Ans. (c) [SSC CGL Exam, 2010]

Expl:- At 0^0C there will be no change in the bowl of ice and water.

56. Water and ice crystal are in equilibrium at 0^0C. when pressure is applied to this system–

(a) More of the ice becomes water

(b) No effective change occur

(c) Water changes to vapor

(d) More amount of ice is formed

Ans. (b) [SSC CPO Exam, 2012]

Expl:- On applying pressure when on the system, there is no effect on the ice and water, when both are in equilibrium at 0^0C.

57. When pressure is increased, the boiling point of water

(a) Decreases (b) Increases

(c) Remains same (d) Depends

Ans. (b)

Expl:- The temperature at which a substance boils is known as its boiling point on increasing pressure boiling point of substance decreases.

58. BOD value of water indicates the–

(a) Amount of organic debris

(b) Amount of oxygen used for biochemical oxidation

(c) Amount of oxygen used for biochemical reduction.

(d) Amount of ozone used for biochemical oxidation.

Ans. (b) [SSC FCI Exam, 2012]

Expl:- BOD (Biochemical oxygen demand) indicates the amount of oxygen used for the biochemical oxidation.

59. Which of the following weeds has been found useful to check water pollution caused by industrial affluent?

(a) Parthenium (b) Elephant Grass

(c) Water Hyacinth (d) Both a and b

Ans. (c) [SSC CHSL Exam, 2012, SSC CGL Exam, 2012]

Expl:- Water hyacinth is used to check the water pollution caused by industrial affluent.

60. Which of the following weeds has been found useful to check water pollution caused by industrial affluent?

(a) Parthenium (b) Elephant Grass

(c) Water Hyacinth (d) Both a and b

Ans. (d)

Expl:- The weed ... India, parthenium weed has spread into regions having extremes in .... these weeds for the survival of the elephants.

61. The Process of ozonation in water treatment is known as –

(a) Ionization (b) Sedimentation

(c) Precipitation (d) Disinfection

Ans. (d) [SSC CHSL Exam, 2012]

Expl:- Ozone is used in the water treatment for disinfection and oxidation water. First of all in Holland in 1893 ozone is used in the treatment of water.

62. Charcoal is used in water treatment as a/an–

(a) Solvent (b) Absorbent

(c) Coagulant (d) Adsorbent

Ans. (d) [SSC CHSL Exam, 2012]

Expl:- Charcoal or coal of wood is a black Brownish Product which formed when wood or bone is combusted in the absence of oxygen and waters other volatile constituents from animals and vegetation removed. Charcoal is used as an adsorbent in water treatment because charcoal absorb the pollutants present in water.

63. Permissible concentration of residual chlorine in drinking water in mg/L is –

(a) 1.0 (b) 5.0

(c) 0.2 (d) 0.05

Ans. (c) [SSC CHSL Exam, 2012]

Expl:- According to WHO, permissible concentration of residual chlorine in drinking water is 0.2mg/L.

64. Which one of the following does not causes any pollution?

(a) Burning of Rubber

(b) Burning of petrol

(c) Use of solar energy

(d) All of these

Ans. (c) [SSC CHSL Exam, 2012]

Expl:- Solar energy does not cause any pollution, while burning of rubber produces carbon dioxide and sulphur dioxide. Burning Petrol also produced carbon dioxide, carbon Monoxide, sulphur dioxide etc.

65. **Detergents used for cleaning cloths and utensils contain–**

(a) Bicarbonate (b) Nitrate
(c) Sulphonates (d) Bismuthates

Ans. (c) [SSC MTS Exam, – 2006, SSC CGL Exam, 2005]

Expl:- A detergent is a special kind of carbon compounds, which has cleaning action such as soap. Detergent can be used in both types of water soft water as well as Hard Water. It mainly Contains sulphonates.

66. **Detergent cleans the surface on the principle of –**

(a) Viscosity (b) Surface tension
(c) Elasticity (d) Buoyancy

Ans. (b) [SSC CPO Exam, 2008]

Expl:- Detergent acts on the principle of surface tension. They reduce the surface tension.

67. **Aqueous Hydrolysis of sucrose formed –**

(a) Only Lactose
(b) Only Glucose
(c) Glucose and Fructose
(d) Glucose and Lactose

Ans. (c) [SSC MTS Exam, – 2006]

Expl:- Sucrose in the presence of enzyme inverses, converted into glucose and Fructose by aqueous Hydrolysis. Sucrose ($C_{12}H_{22}O_{11}$) is a disaccharide sugar. It is known as sugar of sugarcane.

68. **Glucose is a type of –**

(a) Pentose Sugar (b) Hexose Sugar
(c) Tetrose Sugar (d) Diose Sugar

Ans. (b) [SSC CHSL Exam, 2014]

Expl:- Glucose is a type of Hexose sugar. Its also known as grape sugar. Its chemical formula is $C_6H_{12}O_6$.

69. **Dry Ice is a solid type of –**

(a) Ammonia (b) Carbon dioxide
(c) Nitrogen (d) Oxygen

Ans. (b) [SSC MTS Exam, – 2011]

Expl:- Solid ice is a type of carbon dioxide. Carbon dioxide gas is used in fire extinguisher.

70. **What is dry ice?**

(a) Dry ice without water
(b) Benzoic acid
(c) Glacial acetic acid
(d) Solid carbon dioxide

Ans. (d) [SSC MTS Exam, – 2008, SSC CGL Exam, 2012]

Expl:- Carbon dioxide (chemical formula CO_2) is a colorless and odorless gas that is ..... Liquid and solid carbon dioxide are important refrigerants, especially in the food industry.

71. **Dry Ice is a solid type of–**

(a) Air (b) Nitrogen
(c) Water (d) Carbon dioxide

Ans. (d) [SSC MTS Exam, – 2011, SSC CGL – 2015]

Expl:- Dry ice is solid CO2 with a low temperature of -78° C (-109° F). At atmospheric pressure, solid CO2 sublimates directly to vapor without a liquid phase. This unique property means that the dry ice simply "disappears"

72. **Water gas is a Mixture of–**

(a) Carbon monoxide and Hydrogen
(b) Carbon monoxide and Nitrogen
(c) Carbon dioxide and Nitrogen
(d) Carbon dioxide and Nitrogen

Ans. (a) [SSC CHSL Exam, 2011]

Expl:- Water gas is a Mixture of carbon monoxide (CO) and hydrogen (H_2)

73. **Water gas constitutes –**

(a) CO and H_2O (b) CO_2 and CO
(c) CO and H_2 (d) CO_2 and H_2

Ans. (c) [SSC CPO Exam, 2015]

Expl:- Water gas is a mixture of carbon monoxide and Hydrogen. Mixture of CO and H_2 Gas is used to synthesis the methanol it is also known as syngas.

74. **Mercury is a –**

(a) Solid Metal (b) Liquid Metal
(c) Solid non–metal (d) Liquid Non – Metal

Ans. (b) [SSC Steno Exam, 2010]

Expl:- Liquid metal consists of alloys with very low melting points which form a eutectic that is liquid at room temperature.

75. **Which one of the following refer to white soft that covers the land in some areas during the dry Season?**

(a) Erg (b) Usar
(c) Reh (d) Reg

Ans. (c) [SSC CGL Exam, 2015]

Expl:- Reh is related to the soluble sodium salts, which covers the some part of land is dry season. It is used as an detergent in rural backward areas.

76. **Enzyme which coagulate the milk into curd–**

(a) Renin (b) Pepsin
(c) Regin (d) Citrate

Ans. (a) [SSC Steno Exam, 2011]

Expl:- Renin enzyme coagulate is the milk into curd.

77. **Which one of the following is an Example of gel?**

(a) Cheese (b) Milk

(c) Facial cream (d) None of these

Ans. (a) [SSC Steno Exam,2011]

Expl:- Cheese is an Example of Gel. Gelatin and gelly also Examples of Gel.

79. Which among the following causes permanent Hardness of water?

(a) Magnesium Bicarbonate
(b) Sodium Chloride
(c) Calcium Sulphate
(d) Calcium bicarbonate

Ans. (c) [SSC CGL Exam, 2014]

Expl:- Calcium Sulphate causes permanent Hardness of water. It cannot be removed by boiling.

Permanent Hardness of water = Hardness of Calcium + Hardness of magnesium

80. Process of Removal of calcium and Magnesium is known as –

(a) Filtration (b) Sedimentation
(c) Flocculation (d) Water softening

Ans. (d) [SSC Tax Asst. Exam,2009]

Expl:- Soft water forms Lather with soap but hard water does not so water which does not form lather with soap known as hard water. Hardness of water is due to the presence of impurity of Bicarbonate, sulphate, chloride etc. of calcium and Magnesium. Process of removal of calcium and Magnesium from water is known as water softening.

81. What is the process of removal of Hardness of water?

(a) Purification (b) Filtration
(c) Water softening (d) Refining

Ans. (c) [SSC MTS Exam, – 2014]

Expl:- Water softening is the removal of calcium, magnesium, and certain other metal cations in hard water. The resulting soft water is more compatible with soap and extends the lifetime of plumbing. Water softening is usually achieved using lime softening or ion-exchange resins.

82. Which one of the following metal, polluted water highly?

(a) Arsenic (b) Lead
(c) Magnesium (d) Potassium

Ans. (a) [SSC LDC Exam, 2005]

Expl:- Arsenic in Compound State found most of the places over earth. In the vapors of volcano, ocean and in many mineral water. It is responsible for the highly pollution of water.

83. Which one among the following take place due to the Higher concentration of Nitrogen and Phosphorous?

(a) Eutrophication (b) Hardness
(c) Alkalinity (d) Acidity

Ans. (c) [SSC CHSL Exam, 2012]

Expl:- Concentration of Nitrogen and Phosphorous cause alkalinity in water. If PH-value of soil is greater than 7 then it known as alkalinity of soil. Gypsum is used for the treatment of Alkalinity of Soil.

84. Phenolics as Pollutant can be removed from waste water by use of–

(a) Ion exchange method
(b) Reverse osmosis method
(c) Electrolytic decomposition technique
(d) Polymeric adsorbents

Ans. (a) [SSC CGL Exam, 2012]

Expl:- Phenolics as pollutant removed from waste water by Ion exchange method. Ion exchange method is also used in separation of metals, catalytic processes, medicines, purification of Juice and in the production of sugar.

85. Highly polluting industries comes under the category of–

(a) Orange (b) Red
(c) Yellow (d) Black

Ans. (b) [SSC CHSL Exam, 2012]

Expl:- According to Forest Environment ministry highly polluting industries are categorized in red category.

86. Which of the following Agriculture practices have been primarily responsible for the pollution of our water resources?

1. Use of Live Sock Manure
2. Use of chemical fertilizer
3. Excessive use of chemical pesticides
4. Deforestation

(a) 1 and 2 (b) 1, 2 and 4
(c) 2 and 3 (d) 1, 3 and 4

Ans. (c) [SSC CHSL Exam, 2012]

Expl:- Modern agriculture practices include excessive use of chemical fertilizers and pesticides which pollutes water resources.

88. When Hydrogen combusts in air, then formed–

(a) Ammonia (b) Water
(c) Methane (d) Carbonic acid.

Ans. (b) [SSC Steno Exam, 2010]

Expl:- When Hydrogen burns in air, then it form water $2H_2 + O_2 \rightarrow 2H_2O$

89. Gas used as a fire extinguisher is–

(a) Neon (b) Nitrogen
(c) Carbon dioxide (d) Carbon Monoxide

Ans. (c) [SSC CHSL Exam, 2013]

Expl:- Carbon dioxide Gas is used as a fire extinguisher. It stops the supply of oxygen which is necessary for the burning of object because its Heavier than oxygen.

90. Which one of the following pollutant is responsible for the ozone Hole?

(a) CO_2 (b) SO_2

(c) CO (d) CFC

Ans. (d) [SSC CGL Exam, 2014]

Expl:- CFC (Chloro Fluorocarbon) is responsible for the Ozone Hole.

91. Chemically Lime water is –

(a) Calcium Hydroxide (b) Sodium Carbonate

(c) Sodium Hydroxide (d) Calcium carbonate

Ans. (a) [SSC CGL Exam, 2006]

Expl:- Chemically Lime water is known as calcium Hydroxide and its chemical formula is $Ca(OH)_2$.

92. Chemical name of 'Oil of Vitriol' is–

(a) Sulphuric acid (b) Hydrochloric acid

(c) Phosphoric acid (d) Nitric acid

Ans. (a) [SSC Steno Exam, 2012]

Expl:- Sulphuric acid (H_2SO_4) also known as 'oil of vitriol'

93. Which gas is used for converting vegetable oils into saturated fats –

(a) H_2 (b) O2

(c) Cl_2 (d) SO_2

Ans. (a) [SSC CHSL Exam, 2010]

Expl:- Vegetable oils are converted into saturated fats in the presence of Nickel as a catalyst by the addition of hydrogen and this process is known as Hydrogenation. Glycoside having boiling point less than 20°C known as oil and glycoside having Boiling point more than 20°C known as Fats.

94. Propagation of Sound wave in Gas involves –

(a) Adiabatic Compression and rare faction

(b) Isothermal compression and Rarefaction

(c) Isochoric Compression and Rarefaction

(d) Isobaric Compression and rarefaction

Ans. (a) [SSC CGL Exam, 2010]

Expl:- Propagation of sound wave in Gas occurs in the form of adiabatic compression and rarefaction.

95. What is the value of Gas constant 'R' in erg per degree per mol?

(a) 8.314×107 (b) 8.341×107

(c) 8.413×107 (d) 4.183×107

Ans. (a) [SSC MTS Exam, – 2013]

Expl:- 8.314×107 erg per degree per mol

96. Heat transfer Horizontally with in atmosphere is called–

(a) Conduction (b) Convection

(c) Absorption (d) Advection

Ans. (d) [SSC CGL Exam, 2010]

Expl:- Heat transfer Horizontally with in atmosphere is called advection and heat transfer vertically called convection.

97. Which gas is used as a fire extinguisher?

(a) Carbon dioxide (b) Carbon Monoxide

(c) Carbon sub oxide (d) Sulphurdi oxide

Ans. (a) [SSC Tax Asst. Exam,2007]

Expl:- Carbon dioxide is used as fire extinguisher

98. Chemical name of bleaching powder is–

(a) Calcium chlorate

(b) Calcium Hypochlorite

(c) Calcium chloro hypochlorite

(d) Calcium dichloride

Ans. (b) [SSC CGL Exam,2006, SSC CHSL Exam, 2010]

Expl:- Chemically Bleaching power is known as calcium hypochlorite and its chemical formula is $CaOCl_2$. It is used in disinfection of water as a bleaching agent.

It is also used in the manufacturing of chlorine gases and chloroform ($CHCl_3$).

99. Which one among the following used commonly in the dehydration of water?

(a) Bleaching Powder (b) Alum

(c) Borax (d) Soda Powder

Ans. (a)

Expl:- Calcium hypochlorite is an inorganic compound with formula Ca(ClO) . As a mixture with lime and calcium chloride, it is marketed as chlorine powder or bleach powder for water treatment and as a bleaching agent.

100. Which one of the following is odd–

(a) Chalk (b) Slaked Lime

(c) Lime (d) Marble

Ans. (b) [SSC CHSL Exam, 2011]

Expl:- Marble is a metamorphic rock, which is the result of metamorphosis of Lime stone. Chalk also is a type of Lime Stone. Slaked Lime is a colourless crystal with chemical formula $Ca(OH)_2$.

101. Lime water becomes milky when exposed to air due to the presence of –

(a) Carbon dioxide (b) Nitrogen

(c) Oxygen (d) Sulphur dioxide

Ans. (a) [SSC CHSL Exam, 2011]

Expl:- Lime water absorb carbon dioxide strongly and due to the presence of carbon dioxide it becomes milky.

102. Which of the following Gas is coloured?

(a) Oxygen (b) Nitrogen

(c) Chlorine (d) Hydrogen

Ans. (c) [SSC CHSL Exam, 2015]

Expl:- Oxygen, Nitrogen and Hydrogen and colourless gases while chlorine is a coloured gas with colour Light green/ yellow.

103. Venturimeter is used to measure the–

(a) Rate of flow of Liquid

(b) Fluid pressure

(c) Fluid density

(d) Surface tension

Ans. (a) [SSC CHSL Exam, 2015]

Expl:- Venturimeter is a device which measure rate of flow of Liquid. It is bases upon the principle of Bernoulli's equation According to which pressure difference is created by reducing the crosesstional area of the flow of passage. Venturimeter pipe is very narrow at a place where pressure remain very low due to very High speed and at wider place of pipe pressure extered more by this pressure difference rate of flow of Liquid can be calculated.

104. The two specific Heats of gases are related by–

(a) CP–CV = RJ (b) CP–CV = R/J

(c) CP/CV = R (d) CP+CV = RJ

Ans. (b) [SSC CGL Exam, 2015]

Expl:- Specific Heat is the amount of Heat required to raise the temperature by 1°C. At a given volume it is used to increase the temperature only. At a given pressure specific Heat at constant pressure is always greater than the specific Heat at constant volume and their relation is expressed as CP–CV = R/J.

PETROLEUM AND FIBER

1. Quality of Petrol expressed in terms of –

(a) Cetane number (b) Octane number

(c) Gold Number (d) None of these

Ans. (b)

Expl:- Quality of petrol is expressed in terms of its octane number. Octane number is the measure of ignition quality of gasoline or petrol.

2. A white solid 'A' gives off a gas which turns lime water milky. The residue is yellow when but turns white and cooling. Now the solid is–

(a) Zinc Sulphate (b) Zinc Carbonate

(c) Lead Sulphate (d) Lead Carbonate

Ans. (b) [SSC CHSL Exam, 2012]

Expl:- On Heating Zinc carbonate gives Zinc oxide and carbon dioxide and carbon dioxide turns Lime water to the milky and when Hot Z no becomes yellow and on cools it becomes white

$$ZnCO_3 \xrightarrow{Heat} Zno - CO_2$$

3. Which one of the following is main constituent of LPG?

(a) Methane (b) Ethane

(c) Propane (d) Butane

Ans. (d) [SSC MTS Exam, - 2011]

Expl:- LPG (Liquid Petroleum Gas) is the mixture of ethane (C_2H_6), Propane (C_3H_8) and Butane (C_4H_{10}). But its main constituents are butane and isobutene. Natural gas mainly contains methane and ethane gases which are comparatively lighter.

4. In LPG cylinder under the High Pressure mainly mixture of Gases filled in Liquid form –

(a) Methane and Ethane

(b) Ethane and Hexane

(c) Propane and Butane

(d) Hexane and octane

Ans. (c) [SSC Tax Asst. 2007]

Expl:- Propane has a lower boiling point thanbutane so it will continue to convert from a liquid to a gas even in very cold conditions, down to -45°C. When stored as a liquid in a tank, it exerts a greater pressure than Butane at the same temperature.

5. Which among the following used as a Catalyst in the production of High Octane fuel?

(a) H_2O (b) HCL

(c) H_2SO_4 (d) HF

Ans. (c) [SSC CGL Exam, 2013]

Expl:- Sulphuric Acid (H_2SO_4) is used as a catalyst in the Production of High Octane Fuel. It is used as a fuel in the Aero planes.

6. Kitchen or Cooking Gas is a mixture of –

(a) Methane and Ethylene

(b) Carbon didxide and oxygen

(c) Butane and Propane

(d) Carbon Mono oxide and carbon dioxide

Ans. (c) [SSC CPO Exam, 2010]

Expl:- LPG mainly contains Butane. It's a colourless and Highly inflammable gas and odourless gas. Ethyl mercaptan is added to LPG to distinctive putrid smell. Chemical formula of Ethyl mercaptan is CH_3CH_2SH.

7. **PNG (Piped Natural Gas) is used for –**

(a) Mining (b) Welding

(c) Anesthesia (d) Cooking

Ans. (d) [SSC CGL Exam, 2013]

Expl:- PNG is mainly used in cooking of food and Gas Geysers. It's a better option of LPG Cylinder.

8. **Which one of the following is a synthetic polymer?**

(a) Silk (b) Protein

(c) Polystyrene (d) Starch

Ans. (c) [SSC LDC Exam, 2005]

Expl:- Polystyrene is a synthetic polymer. It is used in making toys.

10. **Which among the following is a petroleum wax?**

(a) Honey Wax (b) Paraffin Wax

(c) Jojoba Wax (d) Carnauba Wax

Ans. (b) [SSC CGL Exam, 2005]

Expl:- Paraffin wax is known as petroleum wax. Paraffin wax is used for manufacturing of candles. Paraffin wax is an aliphatic hydrocarbon. Honey wax is obtained by Honeybee.

11. **Wax used for making candles is chemically a mixture of–**

(a) Aliphatic Hydrocarbons

(b) Aromatic Hydrocarbons

(c) Cyclic Hydrocarbons

(d) Aliphatic and Aromatic Hydrocarbon

Ans. (a) [SSC Tax Asst. 2008]

Expl:- An aliphatic compound is ahydrocarbon compound containing carbon and hydrogen joined together in straight chains, branched trains or non-aromatic rings. Aliphaticcompounds may be saturated (e.g., hexane and other alkanes) or unsaturated (e.g., hexene and other alkene, as well as alkynes).

12. **Petroleum is a Mixture of –**

(a) Carbohydrates (b) Carbonates

(c) Hydrocarbons (d) Carbides

Ans. (c) [SSC CPO Exam, 2007]

Expl:- Petroleum is a mixture of Hydrocarbons, which mainly contains aliphatic hydrocarbon alkanes (C1–C40), cycloparafins and arcenatic Hydrocarbons. Its main gaseous constituents are Hydrocarbon, Gasoline, Petrol and diesel.

13. **Which of the following could be used as fuel in propellant of Rockets?**

(a) Liquid Hydrogen + Liquid Nitrogen

(b) Liquid Oxygen + Liquid Argon

(c) Liquid Nitrogen + Liquid oxygen

(d) Liquid Hydrogen + Liquid oxygen

Ans. (d) [SSC CGL Exam, 2011]

Expl:- A mixture of Liquid Hydrogen and Liquid oxygen is used as a fuel in rockets.

14. **Glycol is added to aviation gasoline because it–**

(a) Prevents freezing of petrol

(b) Reduces consumption of petrol

(c) Reduces evaporation of petrol

(d) Increase efficiency of petrol

Ans. (a) [SSC CGL Exam, 2011]

Expl:- Glycol is added to aviation gasoline because it prevents freezing of Petrol.

15. **Water is not effective in extinguishing a fire caused by petrol because–**

(a) The Flame is too Hot for water to cool it down

(b) Water and petrol react chemically

(c) Water and petrol are miscible with each other

(d) Water and petrol are immiscible with each other and petrol which forms upper Layer continuous to burn.

Ans. (d) [SSC CGL Exam, 2008, SSC CHSL Exam, 2011]

Expl:- Water is not effective in extinguish a fire caused by petrol because water and petrol are immiscible with each other and petrol which forms upper Layer continuous to burn.

17. **Diesel oil is prefer for Heavy Motor Vehicles because it–**

(a) It's cheaper

(b) Less damage to engine

(c) It has more capacity and fuel save

(d) Large scale production from raw material

Ans. (c) [SSC MTS Exam, – 2008]

Expl:- It has more capacity and save the fuel diesel oil is favourable for Heavy Motor Vehicle because it has more capacity and save the Fuel.

18. **The temperature of oxy–acetylene flame is around–**

(a) 2800°C (b) 3200°C

(c) 4000°C (d) 1500°C

Ans. (b) [SSC CGL Exam, 2011]

Expl:- Acetylenes gases react with oxygen and form flame oxy-acetylenes can produce the temperature more than 3200°C.

20. **Polyethene is formed by –**

(a) Ethylene (b) Propylene

(c) Acetylenes (d) Anlene

Ans. (a) [SSC Sec off 2006]

Expl:- Polyethene is a polymer, which has monomer ethylene $CH_2 = CH_2$

21. **Which one of the following is a Natural Polymer?**

(a) Bakelite (b) Cellulose

(c) PVC (d) Nylon

Ans. (b)

Expl:- Polymer is a compound containing a lot of carbon atoms it is formed after the polymerization of small units known as monomer cellulose, wood, silk, Rubber etc. are natural polymer, while Bakelite, PVC and Nylon are artificial Polymer.

22. **Glycogen, Cellulose and starch are the polymers of–**

(a) Fructose (b) Glucose

(c) Lactose (d) Maltose

Ans. (b) [SSC CGL Exam, 2012]

Expl:- Fructose, cellulose and starch are the polymers of Glucose.

23. **Which of the following element is used to vulcanization the rubber?**

(a) Sulphur (b) Bromein

(c) Silicon (d) Phosphorous

Ans. (a)

Expl:- Natural rubber is very soft. To make it hard carbon is added to it, then it used for manufacturing of tubes and tyres vulcanization of rubber is the Heating of natural rubber with 3-5% of sulphur. Vulcanization of rubber was discovered by good year. Isoprene is a monomer of natural rubber which is obtained from trees.

24. **The process of Heating of Rubber with sulphur to increase it quality is known as –**

(a) Vulcanization (b) Acceleration

(c) Galvanization (d) Sulphonation

Ans. (a) [SSC CGL Exam, 2014]

Expl:- Vulcanization or vulcanisation is a chemical process for converting natural rubber or related polymers into more durable materials by the addition of sulfur or other equivalent curatives or accelerators.

25. **Natural rubber is a polymer of–**

(a) Isoprene (b) Ethylene

(c) Styrene (d) Butadiene

Ans. (a) [SSC MTS Exam, – 2011, SSC CGL Exam, 2006]

Expl:- Isoprene rubber is a synthetic rubber produced using complex catalysts of stereospecific polymerization in solvents.

26. **Which of the following is not a crystalline solid?**

(a) Salt (b) Sugar

(c) Copper sulphate (d) Rubber

Ans. (d) [SSC LDC Exam, 2005]

Expl:- Rubber is not a crystalline solid.

28. **PVC is obtained by the polymerization of –**

(a) Propane (b) Vinyl chloride

(c) Styrene (d) Acetylene

Ans. (b) [SSC CPO Exam, 2012]

Expl:- PVC is formed by the Polymerization of vinyl chloride. It is used in making of covers, thin sheets, films and Rainy seats etc.

29. **The gas that usually cause explosion in coal mines is-**

(a) Hydrogen (b) Carbon Monoxide

(c) Air (d) Methane

Ans. (d) [SSC CHSL Exam, 2018]

Expl:- Evolution of Methane gas from coal mining is very dangerous because 5 to15% of methane cause explosion when comes in contact with air, which usually Highly responsible for all explosion in underground coal mines.

30. **Bakelite and Phenol are the polymers of–**

(a) Formaldehyde (b) Acetaldehyde

(c) Benzaldehyde (d) Cinemmaldehyde

Ans. (a) [SSC Steno Exam, 2011]

Expl:- When Formaldehyde is added to phenol, then it forms phenolic resin, which is known as Bakelite. Bakelite is hard. It is used manufacturing of radio, TV sets and Buckets etc.

31. **Silicon is a Polymer of–**

(a) Silicon Tetra Chloride

(b) Dialkyal dichloro silane

(c) Silane

(d) Tetra alkyal silane

Ans. (b) [SSC CGL Exam, 2013]

Expl:- Silicon is a noble, synthetic compound, which has a lot of various uses. These are oftenly as rubber and insulators of Heat. Silicon is produced by Hydrolytic decomposition of dialkyal dichloro silane (R_2SiCl_2)

32. **Which of the following is related to the discovery Nylon?**

(a) Louis Pasteur

(b) John Cabot

(c) J. Nicephore Niepce

(d) Dr. Wallace H. Carothers

Ans. (d) [SSC MTS Exam, – 2008]

Expl:- Nylon was discovered by American Chemist Dr. Wallace H. Carothers in 1935 but it announced in 1938. It is used in making ropes, parachutes, dress, covering cloth etc.

34. **Which gas among the following used as an anesthetic?**

(a) Methane (b) Carbon dioxide

(c) Nitrous oxide (d) Nitrogen

Ans. (c) [SSC FCI Exam, 2012]

Expl:- Nitrous oxide is used as an anesthetic.

NUCLEAR ENERGY

1. The First Time atomic bomb was released at–
   (a) Nagasaki (b) Hiroshima
   (c) Tokyo (d) Hongkong

Ans. (b) [SSC MTS Exam, – 2011]

Expl:- The first time atomic bomb released by American Air force at Hiroshima in Japan on 6 August 1945, Named 'Little Boy' and after three days America Released Atomic bomb on Nagasaki named 'Fat man'.

2. Hydrogen Bomb is based upon the Principle of–
   (a) Controlled Nuclear Fission
   (b) Uncontrolled Nuclear Fission
   (c) Controlled Nuclear Fusion
   (d) Uncontrolled Nuclear Fusion

Ans. (d) [SSC CGL Exam, 2011]

Expl:- Hydrogen bomb is based upon Uncontrolled Nuclear Fusion. First Hydrogen bomb was made by an American Scientist and Edward Tellerin 1952. Fusion reaction occours very speedly which produced a lot of very harmful radiations Due to fusion of deuterium and tritium a huge amount of energy released.

Deuterium → $H_1^2 H_1^2$

Tritium → $H_1^3 H_1^3$

3. Which type of reaction produces the most harmful radiation?
   (a) Fusion (b) Fission
   (c) Chemical reaction (d) Photo Chemical

Ans. (b) [SSC CGL Exam, 2011]

Expl:- Nuclear fission products are the atomic fragments left after a large atomic ... Thus, fission events normally result in beta radiation and antineutrinos

4. How many countries explode the atom bomb before India?
   (a) 5 (b) 4
   (c) 6 (d) 3

Ans. (a) [SSC CGL Exam, 2005]

Expl:- France, Russia, America, China and Britain exploded the atom bomb before India.

5. Gun Powder was discovered by–
   (a) Roger beckon (b) Colt
   (c) C.V. Raman (d) Dr. Gatting

Ans. (a) [SSC CPO Exam, 2007]

Expl:- It is not sure about the discovery of Gun Powder. But Roger beckons thesis indicate that 41.2% Potassium Nitrate, coal and sulphur 29.4% but at present time gunpowder is a mixture of 75% of Potassium Nitrate 15% of charcoal and 10% of Sulphur.

6. Gun Powder is a Mixture of–
   (a) Sand and TNT
   (b) TNT and Charcoal
   (c) Nitrate, Sulphur and Charcoal
   (d) Sulphur, Sand and Charcoal

Ans. (c) [SSC CGL Exam, 2008]

Expl:- Gunpowder, also known as black powder, is the earliest known chemical explosive. It is a mixture of sulfur, charcoal, and potassium nitrate (saltpeter). The sulfur and charcoal act as fuels, and the saltpeter is an oxidize.

7. Which of the following mixture cause the explosion of TNT (Trinitrotoluene)
   (a) Ammonium Chloride (b) Ammonium Nitrate
   (c) Ammonium Sulphate (d) Ammonium Nitrite

Ans. (b) [SSC MTS Exam, – 2006]

Expl:- Mixture of TNT and Ammonium Nitrate formed a highly explosive product known as Amatol.

8. Which of the following Isotope is used in the production of Nuclear Energy?
   (a) U-239 (b) U-235
   (c) U-238 (d) U-236

Ans. (b) [SSC CGL Exam, 2010]

Expl:- U-235 is used in the production of Nuclear energy.
In Nuclear reactor energy is produced by the controlled chain reaction.

9. High amount of energy is released in the explosion of atomic bomb is due to–
   (a) Conversion of Mass into energy
   (b) Conversion of Chemical Energy into thermal energy.
   (c) Conversion of Mechanical energy into nuclear energy
   (d) Conversion of neutrons into Protons

Ans. (a) [SSC MTS Exam, – 2013]

Expl:- High amount of energy released in the explosion of atomic bomb due to conversion of mass into energy. Mass – energy equivalence shows that mass and energy are interconvert able.

$E = mc^2$

E → Energy

M → Mass

C → Speed of Light

10. **Tritium is an Isotope of –**

(a) Oxygen (b) Hydrogen

(c) Phosphorous (d) Nitrogen

Ans. (b) [SSC CHSL Exam, 2013]

Expl:- Tritium is a radioactive Isotope of Hydrogen (H_1^3). It was discovered by walter Russel in 1920.

11. **Find the odd one out of following?**

(a) Trombay (b) Tarapur

(c) Kalpakkam (d) Narora

Ans. (a) [SSC Steno Exam, 2014]

Expl:- Trombay is odd one out of given options because there is no nuclear reactor but rest of places has Nuclear reactor.

12. **In India Nuclear Weapon was tested at –**

(a) Shri Hari Kota (b) Bangalore

(c) Pokhron (d) Kanchipuram

Ans. (c) [SSC CPO Exam, 2007, SSC CHSL Exam, 2011]

Expl:- Pokhran is a small town in District Jaisalmer in Rajasthan. It is an testing range of Indian Nuclear Programme. Indian Nuclear Energy commission test the Ist Underground Nuclear test in 1974 in Pokhran and after this five more Nuclear test (Underground) Occour in 11th and 13th May in 1988.

13. **Nuclear Power Reactor act on the Principle of–**

(a) Fission

(b) Fusion

(c) Thermal Heating

(d) Combined Effect of all three given above

Ans. (a) [SSC Tax Asst. Exam,2008]

Expl:- Nuclear Energy is that energy that energy atom contains. Nuclear Energy can be produced by either nuclear fission or nuclear fusion. At Today, all nuclear reactor produce energy on the basis of nuclear fission. Fusion is that process which provides energy to stars but its use at earth still under the study and research.

14. **The two elements which are used to absorb the neutrons in nuclear fission during chain reaction –**

(a) Boran and Cadmium

(b) Boran and Plutonium

(c) Cadmium and Uranium

(d) Uranium and Boran

Ans. (a) [SSC CGL Exam, 2011, SSC CPO Exam, 2010]

Expl:- Uranium and Plutonium rod are used as a fuel in nuclear reactors. But boran and cadmium rods are used as rods, which absorb the neutrons released during nuclear fission.

15. **Graphite is used as a..... in nuclear reactors.**

(a) Fuel (b) Lubricant

(c) Moderator (d) Electric Insulator

Ans. (c) [SSC CGL Exam, 2013]

Expl:- Moderator, slowdowns the speed of fast moving Neutrons. Heavy Water (D_2O), graphite or Berilium oxide assessed as moderator in Nuclear reactor out of these Heavy water is considered as best moderator.

16. **Which one of the following used as a moderator in nuclear reactor?**

(a) Simple water (b) Radium

(c) Thorium (d) Graphite

Ans. (d) [SSC CHSL Exam, 2012]

Expl:- A graphite reactor is a nuclear reactorthat uses carbon as a neutron moderator, which allows un-enriched uranium to be used as nuclear fuel.

17. **Heavy water used as a coolant in nuclear reactor. Heavy Water is:**

(a) Water rich in Minerals

(b) Ozonised water

(c) Water containing Minerals of Heavy metals

(d) Water containing heavy Isotopes of Hydrogen atom

Ans. (d) [SSC CHSL Exam, 2014]

Expl:- Heavy water is used as a coolant in nuclear Reactor. Heavy water contains heavy Isotopes of Hydrogen atom.

18. **In nuclear reactor, Neutrons are slowdown by the –**

(a) Fissionable Product

(b) Moderator

(c) Controlling rod

(d) Coolant system

Ans. (b) [SSC CGL Exam, 2015]

Expl:- An explosion can take place, it the reaction did not controlled in Nuclear reactor. For this moderator is used in Nuclear reactor. This moderator slowdown the neutrons.

19. **Phenomenon of Radioactivity was discovered by –**

(a) Becquerel (b) Rutherford

(c) Curie (d) Suri

Ans. (a) [SSC CGL Exam, 2015]

Expl:- Antoine Henri Becquerel (15 December 1852 – 25 August 1908) was a French physicist, Nobel laureate, and the first person to discover evidence of radioactivity. For work in this field he, along with Marie Skłodowska-Curie and Pierre Curie, received the 1903 Nobel Prize in Physics.

20. **Radioactive decay of uranium resulted the formation of final product–**

(a) Radium (b) Thorium

(c) Polonium (d) Lead

Ans. (d) [SSC CGL Exam, 2015]

Expl:- Lead is the final product due to the radioactive decay of uranium. Atoms having atomic number greater than 82 are always unstable.

Uranium eventually decays into a stable isotope of –

(a) Radium (b) Thorium
(c) Lead (d) Polonium

Ans. (c) [SSC CPO Exam, 2011]

Expl:- When radio phosphorus is approached with these considera- ... limited to its topical, external application in superficial skin diseases.

Is the treatment of skin disease the radio isotope used is–

(a) Radio Lead (b) Radio Cobalt
(c) Radio Phosphorous (d) Radio Iodine

Ans. (c) [SSC Steno Exam, 2012]

Expl:- Radio Phosphorous – 32 is used in the treatment of skin disease.

Curie point is the temperature at which–

(a) Matter becomes radioactive
(b) Metal loose Magnetic Properties
(c) Metal Looses conductivity
(d) Transmutation of Metal occours

Ans. (b) [SSC CGL Exam, 2010]

Expl:- On heating metal at temperature greater than Curie temperature metal loses it magnetic properties –

Metal – Curie temperature (°C)

Fe (Iron) – 770

Co (Cobalt) – 1130

Ni (Nickel) – 358

Radioactivity is Measured by –

(a) Colorimeter (b) Polari meter
(c) Barometer (d) Giger – Muller counter

Ans. (d) [SSC CGL Exam, 2006]

Expl:- Radioactivity is measured by Giger Muller counter technique. It's a type of particle detector, which measures the ionization of Radiation. It detects the envision of atomic radiation alpha, beta and Gamma particle.

Which one of the following is not a radioactive element?

(a) Uranium (b) Thorium
(c) Plutonium (d) Zirconium

Ans. (d) [SSC CPO Exam, 2005]

Expl:- Radioactive elements are those elements, which radiates α, β and γ particle. Elements having atomic number greater than 82 are all radioactive but zirconium has atomic no 40 so it's not a radioactive element.

26. The most suitable unit to express the nuclear radius is–

(a) Fermi (b) Angstrom
(c) Micron (d) Nanometer

Ans. (a) [SSC CHSL Exam, 2015]

Expl:- Fermi is the most suitable unit to express the nuclear radius, while atomic radius measures in Angstrom.
1 Fermi = 10–15 m, 1 Angstrom = 10–10m

27. A radioactive substance has Half Life period of four months. Three fourth of substance will decay in–

(a) 6 month (b) 8 month
(c) 12 month (d) 4 month

Ans. (b) [SSC CHSL Exam, 2012]

Expl:- Half Life $+\frac{1}{2}$ = 4 month

Remaining Substance $= 1-\frac{3}{4}=\frac{1}{4}$

Substance remaining after time $n.\frac{t}{2}$ = [illegible]

[illegible] $= \left(-\right)^{*}$ or [illegible] $\rightarrow n = 2$

So, time taken by remaining – part in decay = 2×4 ∴ $n\times\frac{t}{-}$ = 8 months

28. Which one of the following element does not show radioactivity?

(a) Uranium (b) Thorium
(c) Aluminum (d) Polonium

Ans. (c) [SSC CHSL Exam, 2014]

Expl:- Aluminum does not show any radioactivity while all others are radioactive elements.

29. Radioactive Noble Gas is–

(a) Xe (b) He
(c) Ne (d) Rn

Ans. (d) [SSC Steno Exam, 2014]

Expl:- There are 6 Nobel Gases He, Ne, Ar, Kr, Xe, Rn out of these only Radon is radioactive Nobel gas.

30. There is no change in radioactive element (Mass or change) during –

(a) Gamma emission (b) Oxidation
(c) Alpha emission (d) Beta emission

Ans. (a) [SSC MTS Exam, – 2013]

Expl:- There is no change in radioactive element during Gamma emission.

31. Radioactivity is the fission of –

(a) Nucleus (b) Ion

(c) Atom (d) Molecule

Ans. (a) [SSC MTS Exam. – 2013]

Expl:- Radioactivity is the fission of atomic nucleus.

VARIOUS USEFUL CHEMICAL COMPOUNDS

1. Which one of the following is a coordination bond?

(a) Calcium Chloride (b) Magnesium Floride

(c) Sodium chloride (d) Carbon Tetrachloride

Ans. (d) [SSC MTS Exam. – 2014]

Expl:- In coordination compounds, non-Metal Compounds binds together with each other by sharing the electron pairs.

For Example → cCl_4, H_2O, Co, etc.

2. Which one of the following is a Heterocyclic compound?

(a) Benzene (b) Anthracence

(c) Naphthalence (d) Furan

Ans. (d) [SSC CHSL Exam, 2013]

Expl:- Furan is a Heterocyclic Compound.

3. Which one of the following element is used in the manufacturing of Fertilizers?

(a) Potassium (b) Aluminum

(c) Lead (d) Fluorine

Ans. (a) [SSC MTS Exam, 2011]

Expl:- There are mainly three types of Fertilizers, which are known as Nitrogen, Phosphate and Potash. Potash fertilizer is obtained from Potassium.

4. Select the correct statement–

(a) Mixtures are Homogenous.

(b) In a mixture the components are present in a fixed ratio.

(c) The component of a mixture cannot be separated.

(d) The properties of a mixture are same as that of its component.

Ans. (d) [SSC CPO Exam, 2012]

Expl:- Mixture is an impure substance, which is made up of two or more pure substance in any ratio and without any chemical combination and its component can be separated by simple, physical or mechanical methods. Mixture has properties same as those of its component.

5. What is the Main Source of Manufacturing of Nitrogenous Fertilizer?

(a) Ammonia (b) Nitrogen

(c) Nitric acid (d) Nitrogen dioxide

Ans. (a)

Expl:- Nitrogen remains intrastate in environment. By Haber's process Ammonia (NH_3) is formed and by its oxidation Nitrate and Nitrite formed which are essential in the manufacturing of nitrogenous fertilizers.

6. Which among the following does not contain Nitrogen element?

(a) Urea

(b) Supher phosphate of Lime

(c) Indian Salt Shora

(d) Chili Salt Shora

Ans. (b) [SSC MTS Exam. – 2013]

Expl:- Supher phosphate of Lime is a Fertilizer. Its chemical formula is $Ca(H_2PO_4)$. Thus it does not contain Nitrogen.

7. What is the average value of salt present in sea water?

(a) 12.3% (b) 1%

(c) 3.5% (d) 10%

Ans. (c) [SSC Steno Exam, 2014]

Expl:- (Value of Salt present in water) 3.5% or 35 gram/Ltr or 35000PPm

PPm → parts per million

8. Match the following–

A.	Copper Sulphate	1.	Fertilizer
B.	Penicillin	2.	Insecticides
C.	Urea	3.	Antifungal
D.	Malathion	4.	Antibiotic

	A	B	C	D
(a)	1	2	3	4
(b)	2	4	1	3
(c)	3	4	1	2
(d)	4	3	2	1

Ans. (c) [SSC CPO Exam, 2012]

Expl:- Copper sulphate – Antifungal

Penicillin – Antibiotic

Urea – Fertilizer

Marathon – Insecticides.

9. Which one of the following is not a form of carbon?

(a) Graphite (b) Charcoal

(c) Soot (d) Hematite

Ans. (d)

Expl:- Hematite is not a form of carbon. Its chemical formula is Fe_2O_3 and it's made up of Iron and oxygen.

10. Percentage of Lead in Lead Pencils is –

(a) 0 (b) 31-66

(c) 40 (d) 80

[SSC Sec off. Exam, 2007]

Ans. (a)

Expl:- In Lead pencils lead is 0%. In these wax is mixed with graphite to form lead pencils.

The material used in the manufacture of Lead pencil is–

(a) Graphite (b) Lead

(c) Carbon (d) Mica

Ans. (a) [SSC CGL Exam, 2010, SSC Steno Exam, 2005, SSC MTS Exam. – 2002]

Expl:- Graphite is used in pencils because of its ability to leave grey marks on paper. It was originally thought to be a form of lead.

What happens during the charging of Lead operated battery?

(a) So_2 formed

(b) Consumption of Lead Sulphate

(c) Lead Formed

(d) Consumption of sulphuric acid

Ans. (d) [SSC MTS Exam, – 2013]

Expl:- Sulphuric acid (H_2So_4) consumed during the charging of Lead operated battery.

Plaster of Paris is made by the Partial dehydration of–

(a) Green Vitriol (b) Blue Vitriol

(c) Gypsum Salt (d) Epsom Salt

Ans. (c) [SSC MTS Exam, – 1966, SSC Tax Asst. 2006]

Expl:- Plaster of Paris is formed by the partial dehydration of Gypsum Salt. It is used in the medicals For plastering the bones, making toys and Structures etc.

$$CaSo_4 \cdot 2H_2O \xrightarrow{\quad} (CaSo_4)^{?} H_2O + 3H_2O$$

(Gypsum) (POP)

14. Which among the following Halogens is most reactive?

(a) Fluorine (b) Bromine

(c) Iodine (d) Chlorine

Ans. (a)

[SSC CHSL Exam, 2010]

Expl:- Fluorine is most reactive among the Halogens Due to very Low dissociation energy and High electron pairing is most reactive. Except O_2, N_2, He Ne, Ar, it combines directly.

15. Non-metal found in Liquid State –

(a) Bromine (b) Nitrogen

(c) Fluorine (d) Chlorine

Ans. (a)

[SSC CHSL Exam, 2013]

Expl:- Bromine is the only metal which is found in Liquid State at room temperature. It is placed in 7th group in periodic table.

16. **Isomer of ethyl alcohol is –**

(a) Die Methyl ether (b) Dieethyl ether

(c) Acetone (d) Methylethyl ether.

Ans. (a) [SSC MTS Exam, – 2006]

Expl:- Isomers are the compounds having similar molecular formula but different properties. This phenomenon is known as isomerism such as diemethyl ether and ethyl alcohol.

17. **Froth Flotation process is used for the metallurgy of –**

(a) Sulphide ore (b) Oxide ore

(c) Sulphate ore (d) Chloride ore

Ans. (a)

Expl:- Froth flotation method depended upon the tendency of ore and gaunge to get wet sulphide ores are concentrated by this method copper, lead and zinc are extracted from sulphide ores by this method.

18. **Which silver salt is used for making film of photography?**

(a) Silver Bromide (b) Silver chloride

(c) Silver sulphate (d) Silver Nitrate

Ans. (a) [SSC MTS Exam, – 2002, SSC Sec off. 2006]

Expl:- Silver Bromide is used to prepare the Light sensitive chemical (Emulsion) over photographic film, because these are soluble in Hypo solution (Sodium thiosulphate) which makes photographic film transparent.

19. **The chemical name of Hypo commonly used in Photography is–**

(a) Sodium Thiosolphate

(b) Sodium Nitrate

(c) Sodium chloride

(d) Silver Nitrate

Ans. (a) [SSC CHSL Exam, 2014]

Expl:- Chemical formula of hypo is $Na_2 S_2 O_3$ and it's easily solube in water but it's not salube in silver salt.

20. **Silver halides are used in photographic plate because they are–**

(a) Oxidised in air (b) Soluble in Hyposolution

(c) Reduced by Light (d) Totally coloureless

Ans. (b) [SSC CGL Exam, 2010]

Expl:- Silver halides are used in photographic plates because they are.. soluble in hypo solution.. reduced by light.. oxidised in air.

21. **Fermentation of starch gives –**

(a) Ethonol (Ethanol) (b) Ethanol

(c) Methanol (d) Methanol

Ans. (a) [SSC MTS Exam, – 2006]

Expl:- Ethanol is obtained from the fermentation of starch the process of conversion of starch, sugar to alcoholic products (Beer, Whisky and vodka etc.) in the presence of yeast or some bacteria is known as fermentation.

22. Conversion of Heat into electric energy is achieved by using –

(a) Ammeter (b) Hydrometer

(c) Voltmeter (d) Thermocouple

Ans. (d) [SSC Steno Exam, 2010]

Expl:- Thermocouple is used for measuring temperature. It is also used to convert heat into electric energy. While ammeter, Hydrometer and voltmeter are used to measure electric current, relative density of water and Potential difference respectively.

23. Which of the following Nobel gas can forms compound?

(a) Helium (b) Argon

(c) Xenon (d) Krypton

Ans. (c) [SSC CHSL –2010, SSC Steno Exam, 2011]

Expl:- Xenon is a noble gas (Chemical element) with symbol Xe and atomic number 54. Due to Low Ionization Potential it can react with fluorine and oxygen in special conditions and forms chemical compounds.

Such as XeF_2, XeF_6, $XeOF_4$ etc.

24. Hydrochloric acid is also known as–

(a) Galic acid (b) Pic ric acid

(c) Muriatic acid (d) Chloric acid

Ans. (c) [SSC CHSL Exam, 2014]

Expl:- Hydrochloric acid is also known as muriatic acid. It is an aqueous solution of Hydrogen Chloride gas.

25. Which one of the following is strongest salt?

(a) Acitic acid

(b) Monocholoro acidic acid

(c) Dichloro acitic acid

(d) Trichloro acitic acid

Ans. (d) [SSC MTS Exam, – 2006]

Expl:- Trichloro acitic acid ($C_2HCl_3O_2$)

26. Disadvantage of using DDT as pesticide is –

(a) It becomes ineffective after some time

(b) Not easily degradable in nature

(c) Less effective than others

(d) Its High cost

Ans. (b) [SSC CHSL Exam, 2012]

Expl:- As a pesticide DDT did not decompose easily in nature whiles it concentration goes on increasing from one level to another in a food chain known as bio Magnification.

27. pH-scale ranges from –

(a) 0–7 (b) 3–14

(c) 0–14 (d) None of these

Ans. (c) [SSC CGL Exam, 2014]

Expl:- PH scale ranges from 0–14. It is midpoint 7 is known as Neutral Point. This scale is used to identify the nature of solution, weather it's acidic or basic. In solution has pH value less than seven then its acidic in nature such as lemon Juice and solution having pH value greater than seven known as base such as NaoH. Water is neutral with pH value 7.

Acids < 7 Neutral – 7 Base > 7

28. The pH of Lemon Juice is excepted to be–

(a) Nothing can be predicted

(b) Less than seven

(c) More than seven

(d) Equal to seven

Ans. (b) [SSC CHSL Exam, 2015]

Expl:- The pH level of lemon juice is 2.0. The pH scale is used to measure how acidic or alkaline/base a solution is. The pH scale runs from 0 to 14; a pH of 7 is neutral, a pH lower than 7 is acidic and higher than 7 is alkaline.

29. The maximum density of water is at–

(a) 100°C (b) 0°C

(c) 4°C (d) 273°C

Ans. (c) [SSC CHSL Exam, 2014]

Expl:- The maximum density of water is at 4°C. Above this temperature its density decrease because its value increases also below this temp it density also decreases.

30. In a rechargeable cell what kind of energy is stored within the cell?

(a) Electric energy (b) Potential energy

(c) Kinetic energy (d) Chemical energy

Ans. (d) [SSC Sec. off. – 2006]

Expl:- Chemical energy is stored in a rechargeable cell.

31. The acid used in the Lead storage cell is –

(a) Phosphoric acid (b) Hydrochloric acid

(c) Nitric Acid (d) Sulphuric acid

Ans. (d) [SSC Tax Asst. 2006]

Expl:- Sulphuric acid (H_2SO_4), is used in the Lead storage cell or battery.

32. Which one of the following acid is used in the battery?

(a) Hydrochloric acid (b) Hydrofluoric acid

(c) Sulphuric acid (d) None of these

Ans. (c) [SSC Tax Asst. Exam, 2007]

Expl:- Lead and lead dioxide, the active materials on the battery's plates, react with sulfuric acid in the electrolyte to form lead sulfate. The lead sulfate first forms in a finely divided, amorphous state, and easily reverts to lead, leaddioxide and sulfuric acid when the battery recharges.

33. **Which acid is stored in batteries?**
(a) Hydrochloric acid (b) Sulphuric acid
(c) Acetic acid (d) Nitric acid

Ans. (b) [SSC CHSL Exam, 2011]

Expl:- Battery acid is sulfuric acid that has been diluted with water to attain a 37% concentration level.

34. **Which of the following pairs of Material is commonly used in rechargeable batteries used in Torch Lights, Electric Shaver etc.**
(a) Iron and Cadmium
(b) Nickel and Cadmium
(c) Lead and Lead para oxide
(d) Zinc and Carbon

Ans. (d) [SSC CGL Exam, 2005]

Expl:- Zinc (Zn) and Carbon (c) are used for making electrodes of cells used in Torch Lights, Electric shaver etc. carbon act as anode and zinc act as cathode.

35. **The mercury and sodium street Lamps Light up become of–**
(a) Atomic absorption (b) Electron absorption
(c) Atomic emission (d) Electron emission

Ans. (c) [SSC CGL Exam, 2015]

Expl:- Mercury and sodium street Lamps Lights up because of atomic emission. Atomic emission is a chemical analysis that uses the intensity of Light emitted from flame, bulb or Mercury Light etc.

36. **What is asbestos?**
(a) Calcium Magnesium Silicate
(b) Alumina
(c) Calcium Silicate
(d) Magnesium silicate

Ans. (d) [SSC Steno Exam, 2005]

Expl:- The chemical name of asbestos is Magnesium silicate and its chemical are as follows.
1. Chrysotile (White) – $Mg_3(Si_2O_5)(OH)_4$
2. Amosite/Granitite (Brown) – $Fe_7Si_8O_{22}(OH)_2$
3. Crocidolite (Blue)– ह ( ) क

37. **Chemically 'Philosopher wood' is a–**
(a) Zinc oxide (b) Calcium oxide
(c) Aluminum oxide (d) Magnesium

Ans. (a) [SSC CHSL Exam, 2012]

Expl:- Zinc oxide also known as philosopher wool. It is an amphoteric oxide. It is called zince white.

38. **Oxygen is a–**
(a) Reducing agent
(b) Combustion nourishing
(c) Constituent of all gas
(d) Inflammable gas

Ans. (b) [SSC Steno Exam, 2014]

Expl:- Oxygen is a combustion nourishing gas. It is necessary for the combustion.

39. **Carbon monoxide is an inflammable gas which one of the following also inflammable?**
(a) Helium (b) Nitrogen
(c) Oxygen (d) Hydrogen

Ans. (d) [SSC CPO Exam, 2009]

Expl:- Carbon monoxide (Co) is an inflammable gas. Hydrogen is also inflammable from the given options and oxygen is combustion supporting gas.

40. **Select the correct statement regarding the carbon compounds –**
(a) They have low melting and boiling Point
(b) Insoluble in water
(c) These are not easily combustible
(d) They mainly contain carbon and Hydrogen.

Ans. (c) [SSC MTS Exam, – 2013]

Expl:- Corbon compounds are easily combustible in the presence of air but their melting point and boiling point are low.

41. **Chemical Name of common salt is–**
(a) Sodium chloride (b) Sodium Nitrate
(c) Ammonium chloride (d) Calcium chloride

Ans. (a) [SSC Sec officer – 2007]

Expl:- Chemical name of common salt is sodium chloride and it's also known as Rock Salt. Its chemical formula is Nacl.

42. **Sodium chloride or Table salt occurs in nature as the mineral:**
(a) Sylvite (b) Talc
(c) Halite (d) Sphalerite

Ans. (c) [SSC CHSL Exam, 2015]

Expl:- Sodium chloride or Table salt occours in nature as the mineral Halite.

43. **Sodium carbonate commonly known as–**
(a) Baking soda (b) Washing soda
(c) Caustic soda (d) Caustic potash

Ans. (b) [SSC MTS Exam, – 2009, SSC CHSL Exam, 2014]

Expl:- Sodium carbonate is also known as washing soda. Its chemical formula is Na_2Co_3. It is found in the form of $Na_2CO_3.10H_2O$ 10 molecules of water combined with the one molecule of water.

44. Chemical formula of washing soda is–

(a) $Na_2So_4.10H_2O$ (b) $NaHCO_3$

(c) $Na_2Co_3\ 10H_2O$ (d) $Ca(oH)_2$

Ans. (c) [SSC CHSL Exam, 2014]

45. Commercial name of sodium bicarbonate is –

(a) Washing Soda (b) Baking Soda

(c) Bleaching Powder (d) Soda Ash

Ans. (b) [SSC MTS Exam, – 2010, SSC Tax Asst. Exam,2009]

Expl:- Chemical Name of baking soda is sodium bicarbonate ($NaHCO_3$). It is mainly used in Baking Products such as Biscuits, cake etc. It's also known as cooking soda.

46. Chemical name of baking soda is–

(a) Sodium Carbonate (b) Sodium Bicarbonate

(c) Sodium chloride (d) Sodium Nitrate

Ans. (b) [SSC CHSL Exam, 2014]

Expl:- Sodium bicarbonate is a chemical compound with the formula NaHCO . It is a salt composed of sodium ions and bicarbonate ions. Sodium bicarbonate is a white solid that is crystalline but often appears as a fine powder.

47. Chile saltpeter is the common name of–

(a) Potassium Nitrate (b) Sodium Nitrate

(c) Sodium Nitrite (d) Potassium Nitrite

Ans. (b) [SSC CHSL Exam, 2015]

Expl:- Chemical formula of Sodium Nitrate is NaNo3. It's also called the salt Chile saltpeter. It is found most abundantly in Atacama Desert.

48. The process of conversion of sugar into Alcohol is known as–

(a) Fermentation (b) Respiration

(c) Photosynthesis (d) Excretion

Ans. (a) [SSC Steno Exam, 2005]

Expl:- Sugar gets converted into Alcohol (ethanol) by the process of fermentation in the presence of enzyme invertase.

49. Vinegar is the chemical name of –

(a) Acetic acid (b) Hydrochloric acid

(c) Acid of Lemon (d) Oxalic acid

Ans. (a) [SSC MTS Exam, – 2002, 1992, SSC CGL Exam, 2010]

Expl:- Vinegar contains 6–10% of acetic acid (CH_3COOH) vinegar is formed by the fermentation of

50. Which one of the following is found in vinegar?

(a) Lactic acid (b) Formic acid

(c) Butyric acid (d) Acetic acid

Ans. (d) [SSC CPO Exam, 2015]

Expl:- White Vinegar is prepared from distilled alcohol. Vinegars are used for a variety of purposes; cooking, cleaning, pickling and gardening. Typically the Acetic Acid content of avinegar will vary from about 5-8% for Table Vinegars to about 18% for Pickling Vinegars.

51. Vinegar formed by the fermentation of cane sugar contains–

(a) Pomitic acid (b) Lactic acid

(c) Citric acid (d) Acetic acid

Ans. (d) [Tax Asst. Exam,2008]

Expl:- Sugar cane spirit is an alcoholic beverage produced by ... Volatile acidity, measured in terms of acetic acid

52. If some drops of conc sulphuric acid is added to that substance then turns to black, which of the following is that substance?

(a) Vinegar (b) Sugar

(c) Food salt (d) Alcohol

Ans. (b) [SSC Steno Exam, 2014]

Expl:- If some drops of conc. H_2So_4 is dropped on sugar then initially it gets converted into light brown colour and then converted into black by the following chemical equation.

$C_{12}\ H_2O_{11} + H_2SO_4 \rightarrow 12C + 11H_2O$ + Mixture of acid and sugar

(sugar) (Conc. Sulphuric acid) (carbon) (water)

This is also the method of obtaining carbon from carbohydrate.

53. Electrolysis of copper sulphate solution with copper electrodes gives–

(a) Copper at cathode and oxygen at anode

(b) Copper at anode and oxygen at cathode

(c) Copper dissolve itself to give copper at cathode and anode.

(d) Hydrogen at cathode and oxygen at anode

Ans. (a) [SSC Steno Exam, 2011, SSC CHSL Exam, 2010]

Expl:- Aqueous solution of copper sulphate contains ion of cu^{2}, So_4^{2-}, H+, oH⁻ and Molecules of water. During electrolysis of copper sulphate reduction of Cu^{2+} into cu occurs at cathode and oH⁻ ions are oxidized in oxygen at anode.

54. Tip of match stick contains –

(a) Phosphorous Penta oxide

(b) White phosphorous

(c) Red phosphorous

(d) Phosphorous Trichloride

Ans. (c) [SSC Tax Asst. Exam,2009, FCI Exam, 2012]

Expl:- In making of match stick red phosphorous and phosphorous trisulphide is used. Aspen Wood, Red Lead, Antimony Sulphide and Red phosphorous are used with gum.

56. Match Stick uses the allotrop of Phosphorous –

(a) Any Phosphorous (b) Red phosphorous

(c) Black Phosphorus (d) Purple Phosphorus

Ans. (b) [SSC CGL Exam, 2002]

Expl:- Red phosphorus is less volatile than white phosphorus as its tendency to combust spontaneously

57. Head of safety Matches contains –

(a) P_2O_3

(b) Sb_2S_3

(c) Yellow Phosphorous

(d) Red Phosphorous

Ans. (d) [SSC MTS Exam, – 2014]

Expl:- A match is a tool for starting a fire. Typically, modern matches are made of small .... These new phosphorus matches had to be kept in airtight metal boxes but became popular.

57. Green colour seen in firework display, is due to the chloride salt of–

(a) Sodium (b) Calcium

(c) Barium (d) Strontium

Ans. (c) [SSC CGL Exam, 2015]

Expl:- In fireworks Green colour display due to chloride salts of Barium. Salts used for different colours.

1. Strontium sulphate – Red
2. Strontium Carbonate – Bright Red Colour
3. Sodium Salt – Golden yellow
4. Copper Salt – Blue
5. Aluminum Powder – silver Colour.

58. Which of the following will displace Hydrogen from acids to form salts?

(a) S (b) Na

(c) Ag (d) P

Ans. (b) [SSC CHSL Exam, 2014]

Expl:- For the Formation of salts, sodium will displace Hydrogen because in electrochemical series Hydrogen is below sodium.

HCL + NaoH → H2O + Nacl

Acid Base Water Salt

59. If the equilibrium constant for the system:

$H_2 + I_2 \rightleftharpoons 2HI$ and $2HI \rightleftharpoons H_2 + I_2$ are K_1 and K_2 Respectively, the relationship between K_1 and K_2 is–

(a) $K_1 = K_2$ (b) $K_1 = 2K_2$

(c) $K_1 = K_2/2$ (d) $K_1 = 1/K_2$

Ans. (d) [SSC CHSL Exam, 2014]

Expl:- Equilibrium constant for reaction $I_2 + H_2 \rightleftharpoons 2HI$ is $K_1 = \frac{[\ ]}{[\ ][\ ]}$ .....(1)

Equilibrium constant for reaction $2HI \rightleftharpoons I_2 + H_2$

$K2 = \frac{[\ H\ ]}{[\ ]}$ .....(2)

From (1) and (2)

$K1 = \frac{}{}$

60. The acid which fails to Liberate carbon dioxide from Sodium carbonate is –

(a) Sulphuric acid (b) Formic acid

(c) Carbonic acid (d) Acetic acid

Ans. (a) [SSC GD – 2015]

Expl:- Carbonic acid cannot Liberate the carbon dioxide from sodium carbonate

Acetic acid → $NaHCO_3 + CH_3COOH \rightarrow CH_3COONa + Co_2 + H_2O$

Formic acid → $NaHCO_3 + HCOOH \rightarrow HCOONA + Co_2 + H_2O$

Sulphuric acid → $2NaHCO_3 + H_2SO_4 \rightarrow Na_2\ So_4 + 2H_2O + 2CO_2$

61. Tincture iodine is a solution of Solution of Iodine in –

(a) Potassium iodide (b) Ethyl alcohol

(c) Water (d) Sodium chloride

Ans. (a) [SSC Tax Asst. Exam, 2006]

Expl:- Iodine tincture is an antiseptic. Iodine and Potassium Iodide mixed in same ratio with same ratio of water to form solution of Iodine tincture. It is also called weak iodine solution.

62. Mortar is a mixture of water, sand –

(a) Salked lime (b) Quick Lime

(c) Lime Stone (d) Gypsum

Ans. (a) [SSC Tax Asst. Exam,2009]

Expl:- Mortar is a mixture of cement and sand in ratio 1 : 3 with water. Mortar a settling becomes solid and bonds the bricks isotones etc, so it's used in buildings to bond bricks or stones.

63. Most commonly bleaching agent is –

(a) Carbon dioxide (b) Alcohol

(c) Chlorine (d) Sodium Chloride

Ans. (c) [SSC CGL Exam, 2015]

Expl:- Chlorine (Cl_2) is used as a bleaching agent. It can act as bleaching agent in both Gaseous Medium as well as in aqueous Medium. It was discovered by Karl Wilhelm Scheele.

64. **Helium gas is filled in the balloon instead of Hydrogen because its–**

(a) Lighter than Hydrogen
(b) More abundant than Hydrogen
(c) Non-Combustible
(d) More stable

Ans. (c) [SSC CGL Exam, 2008]

Expl:- Helium gas is filled in balloons instead of Hydrogen because it's a non combustible gas. Hydrogen is a combustible gas so it's not used oftenly to fill the balloon.

65. **Why Helium gas used in balloons?**

(a) Its atomic number is two
(b) Its Lighter than air
(c) It's one of the constituents of water
(d) It's a noble gas

Ans. (b) [SSC MTS Exam, – 1999]

Expl:- Helium gas is lighter than air and non-combustible so it's filled in balloons.

66. **A balloon filled with Helium rises in air because –**

(a) Air exerts on upward force on the balloon.
(b) The balloon is weightless
(c) Helium is less dense than air
(d) Helium pushes down the air below the balloon.

Ans. (c) [SSC CPO Exam, 2011]

Expl:- This is because helium is less dense. Because helium is lighter than air, a helium balloon rises. Hydrogen is another gas lighter than air; it is even lighter than helium.

67. **Which gas is filled in balloons?**

(a) Hydrogen (b) Helium
(c) Carbon dioxide (d) Oxygen

Ans. (b) [SSC Steno Exam, 2014]

Expl:- Helium gas is used in balloons, because it's lighter than air. Earlier it was used in tyres but now a days Nitrogen is filled in Aeroplane tyers.

68. **Too much baking and edible oils used repeatedly why is extremely undesirable.**

(a) The oil vapour can cause indoor pollution
(b) Carcinogenic substances like benzepyrene are produced.
(c) Nutrient value of food is lost
(d) Loss and wastage of oil.

Ans. (b)

Expl:- Edible oil contains carcinogenic substance such as Benzpyrene, which can cause cancer. So there edible oils should not be used repeatedly.

69. **Which one of the following is the Moto of Pollution controlling programme to reduce the disposal of river waste in rivers?**

(a) Oxygen consumer (b) Oxygen Producer
(c) Carbon producer (d) Sulphur Producer

Ans. (a) [SSC Steno Exam, 2013]

Expl:- The main Moto of pollution controlling programs are reducing the disposal of oxygen consumer waste in rivers. The pollutant which decreases the amount of oxygen in water is known as oxygen consumers.

70. **The main cause of air pollution in big cities is–**

(a) Waste water
(b) Suspended particles
(c) Combustion of Fossil Fuel
(d) Thermal power Plant

Ans. (b) [SSC Steno Exam, 2012]

Expl:- Due to the emission of carbon dioxide, carbon monoxide, Nitrogen oxide, Lead and suspended particles of Heavy metals big cities environment is more polluted as compare to rural environment.

71. **The word 'Brown air' is used for –**

(a) Acidic Smoke
(b) Industrial Smoke
(c) Photochemical Smoke
(d) Sulphur Smoke

Ans. (c) [SSC CGL Exam, 2015]

Expl:- Brown air word is used for photochemical smoke. Photochemical smoke is obtained by the reaction of air pollutants and sunlight. Its mains constituent gases are Hydrocarbon, Nitrogen oxide, PAN.

(Hydrocarbon) $HC + NO + O_2 \xrightarrow{\text{Sunlight}} NO_2 + PAN$ (Peroxy acetyl Nitrate)

72. **Which affected the 'Taj Mahal'?**

(a) SO_2 (b) CO
(c) NO (d) CO_2

Ans. (a) [SSC Steno Exam, 2014]

Expl:- Taj Mahal is affected by acid rain which mainly contains SO_2.

73. **Automobile exhausted in the harmful compound–**

(a) Carbon dioxide (b) Carbon Monoxide
(c) Smoke (d) All of these

Ans. (d) [SSC Steno Exam, 2014]

Expl:- Automobile exhaust harmful compound such as carbon dioxide, carbon, monoxide, smoke, Nitrogen oxide, sulphur dioxide etc.

Amount of sulphur dioxide can be reduced by the used of–

(a) More efficient car engine

(b) By using catalytic convertor in industry.

(c) By using static electricity in chimneys of factories to attract it.

(d) Lower sulphur fuel

Ans. (d) [SSC MTS Exam, – 2013]

Expl:- By using Lower sulphur fuel in Vehicle, amount of SO_2 can be decreased in atmosphere.

Hydrogen sulphide is a–

(a) Colourless, odourless gas

(b) Yellowish gas with Pungent odour

(c) Reddish brown gas with fishy odour

(d) Colourless gas with rotten egg smell

Ans. (d) [SSC Steno Exam, 2014]

Expl:- Hydrogen sulphide is an odourless gas having smell of rotten eggs.

Example of macro pollutants are –

(a) CH_4 (Methane)

(b) Cl_2 (Chlorine)

(c) CFC (Chlrorofluoro carbons)

(d) PAN (Peroxyl acetyl Nitrate)

Ans. (d) [SSC Steno Exam, 2012]

Expl:- PAN (Peroxyl acetyl Nitrate) is a macro pollutant.

What is Peroxyl?

(a) Acidic acid (b) Macro Pollutant

(c) Vitamin (d) Plant Hormone

Ans. (b) [SSC CGL Exam, 2015]

Expl:- When one speaks about macro-waste, one often evokes wastewhich we produce and who find ourselves on the ranges. One less oftenthinks of " natural " waste than are the deadwood and the dead sheetsof posidonies.

Photochemical smog is the resultant of reaction among–

(a) Higher concentration of NO_2, O_3, Co in the evening

(b) Co, Co_2, No_3 at Low temperature

(c) Co, O_2 and peroxyl acetyl Nitrate is the presence of sunlight

(d) No_2, O_3 and Peroxyl Nitrate in the sunlight.

Ans. (d) [SSC CGL Exam, 2015]

Expl:- Photochemical smog is the result of reaction of (NO_2) Nitrogen dioxide and vapourised compounds in the presence of sunlight. Following conditions are necessary for its formation.

1. Sunlight
2. Nitrogen dioxide
3. Temperature greater than 18°C

By the result of this reaction toxic constituent ozone and preoxyacetyl Nitrate produced.

79. Burning Pyrites ore gives out–

(a) Carbon dioxide gas

(b) Sulphur dioxide gas

(c) Nitrogen dioxide gas

(d) Nitric oxide gas

Ans. (b) [SSC Steno Exam, 2011, SSC CHSL Exam, 2010]

Expl:- Burning of Pyrite ore gives out sulphur dioxide gas, that why it's used on a Large Scale in Paper industry and in making sulphuric acid.

Iron Sulphide – FeS_2

80. Chloroform can be used as –

(a) Analgesic (b) Anaesthetic

(c) Antimalarial (d) Antibiotic

Ans. (b) [SSC CHSL Exam, 2012]

Expl:- By the inhalation of chloroform unconsciousness caused, so it is used as a Anaesthetic. The first time chloroform used as in Anaesthetic in 1874 by James Simpon.

81. Sour taste of coca cola is due to –

(a) Acetic acid (b) Phosphoric acid

(c) Hydrochloric acid (d) Formic acid

Ans. (b) [SSC CPO Exam, 2006]

Expl:- Sour taste of coca cola is due to the existence of phosphoric acid it is used sowing agent in manufacturing of soft drinks.

82. The compound that has Least value for octane number is–

(a) N-Heptanes (b) 2-Methyle heptanes

(c) Iso octane (d) 2,2 die methyl Hexane

Ans. (a) [SSC CGL Exam, 2014]

Expl:- The octane number of fuel is based on how two fuels ignite, under compression. Octane no of all fuels Lies between n-Heptane and 2,2, 4- Tri Methyl pentane (Iso -octane). Octane number of n-Heptanes is zero while iso-octane has 100.

83. Ammonal is a Mixture of–

(a) Aluminum powder and Ammonium nitrate

(b) Aluminum powder and Ammonium chloride

(c) Aluminum powder and Ammonium sulphate

(d) Aluminum powder and Potassium Nitrate.

Ans. (a) [SSC CPO Exam, 2008]

Expl:- Ammonal is a mixture of Aluminum powder and Ammonium Nitrate. It is used in making bombs.

84. **Which one of the following is known as solution?**

(a) Compound
(b) Homogenous mixture
(c) Heterogeneous Mxture
(d) Suspension

Ans. (b) [SSC CGL Exam, 2014]

Expl:- Homogenous mixture is also known as solution. Its constituent's particles cannot be seen with naked eyes such as mixture of salt and water is a Homogenous mixture and also known as Solution.

85. **Organic acid containing Hydroxyl group is –**

(a) Benzoic acid (b) Carboxylic acid
(c) Acetic acid (d) Cinnamic acid

Ans. (b) [SSC MTS Exam, – 2006]

Expl:- Benzoic acid, cinnamic acid and acetic acid contains carboxylic group (–COOH), while Phenol is another name of carboxylic acid and it contains Hydroxyl group.

86. **Element with Highest Ionization energy is–**

(a) Hydrogen (b) Helium
(c) Lithium (d) Sodium

Ans. (b) [SSC MTS Exam, – 2008]

Expl:- Due to stable electronic configuration and completely filled orbital's noble gases has higher ionization energy. From the given options Helium has highest ionization energy.

87. **White Phosphorous is place under the–**

(a) Ammonia (b) Cold water
(c) Alcohol (d) Kerosene

Ans. (b) [SSC LDC Exam, 2005]

Expl:- White Phosphorous is immiseable in water, but in carbon di-sulphide, Ether, Benzene, alcohal etc. it miseable. At normal temperature white phosphorous burn automatically in air because its ignition temperature is very low so to prevent it from burning it placed under cold water.

88. **Commonly sodium is kept under the–**

(a) Alcohol (b) Water
(c) Ammonia (d) Kerosene oil

Ans. (d) [SSC Stenographer Exam, 2005]

Expl:- Alkali metals are placed under the kerosene oil because they can easily oxidize with air and water.

89. **Total number of inner transition elements are –**

(a) 16 (b) 28
(c) 32 (d) 33

Ans. (b) [SSC MTS Exam, – 2008]

Expl:- Total number of inner transition elements is 28 in which 14 elements are lanthanides and other 14 are Actinides

90. **Match the source of column B with the product of column A–**

	Column A (Product)	Column B (Source)
A.	Formic acid	1. Lemon
B.	Citric Acid	2. Tamarind
C.	Tartaric Acid	3. Ants

	A	B	C
(a)	3	2	1
(b)	3	1	2
(c)	2	3	1
(d)	2	1	3

Ans. (b) [SSC Tax Asst Exam, 20

Expl:- Formic acid – Ants, Citric acid – lemon, Tartaric acid – Tamarind

91. **Alcoholic group can be identified by–**

(a) Tollenis Reagent Test
(b) Esterification test
(c) $FeCl_3$ Test
(d) Ozonolysis Reaction

Ans. (c) [SSC CHSL Exam, 20

Expl:- Alcoholic group can be identify by $FeCl_3$ Test

92. **Formalin is an aqueous solution of –**

(a) Methanol (b) Ethanol
(c) Fructose (d) Nitric acid

Ans. (a) [SSC CGL Exam, 20

Expl:- Formalin is solution of 40% Formaldehyde or Methanol. It can be aqueous and used as a strong disinfectant and for the sample of animals.

93. **$KmnO_4$ can be used as –**

(a) Fertilizer (b) Insecticide
(c) Disinfectant (d) Pesticide

Ans. (c) [SSC CHSL Exam, 20

Expl:- $KMnO_4$ (Potassium Permanganate) can be used as a disinfectant. It is an antiseptic which can be used in skin disease of Hands and Legs and transmission of bacterial disease can also be prevented. It's also use in the treatment of gonorrhea disease. It's also known as Red Medicine or Lal dawa.

94. **What happen when a drop of Glycerol is added to $KMnO_4$ spread on paper?**

(a) There is violent explosion
(b) There is a crackling sound
(c) The paper ignites
(d) There is no reaction

Ans. (c) [SSC CGL Exam, 20

Expl:- When a drop of glycerol is added to $KMnO_4$ spread on paper and then paper ignites. KMno4 act as a strong oxidant.

$14KMnO_4 + 4C_3H_5(OH)_3 \rightarrow 7K_2CO_3 + 7Mn_2O_3 + 5CO_2 + 16H_2O$

Which of the following can be used as an anesthetic?

(a) NH_3 (b) No

(c) No_2 (d) N_2O

Ans. (d) [SSC MTS Exam, – 2014]

Expl:- Nitrous oxide (N_2O) which is known as laughing gas is a carbonic compound. it is used as an anesthetic in surgery and dental treatment.

'Saponification' is a process by which–

(a) Soap is prepared (b) Sulphur is extracted

(c) Plastic is prepared (d) Protein is identified.

Ans. (a) [SSC CHSL Exam, 2012]

Expl:- Saponification is the alkaline hydrolysis of the fatty acid esters. Example: The chemical reaction between any fat and sodium hydroxide is a saponification reaction. triglyceride + sodium hydroxide (or potassium hydroxide) → glycerol + 3 soap molecules.

By Product obtained by soap industry is –

(a) Caustic soda (b) Glycerol

(c) Caustic Potash (d) Naphthalene

Ans. (b) [SSC Sec. off. – 2006]

Expl:- NaOH (Sodium Hydroxide) is a white solid crystal. Its aqueous solution is smooth as such as soap. It is a burning substance. It is also known as burning soda. It is also used in the manufacturing of soap Hydrolysis of Fatty acids with caustic soda forms soap and glycerol and this process is known as 'sponification'.

The process involved in the making of soap is–

(a) Sponification (b) Hydrolysis

(c) Polymerization (d) Liquefaction

Ans. (a) [SSC CPO Exam, 2008]

Expl:- Saponification is the alkaline hydrolysis of the fatty acid esters. Example: The chemical reaction between any fat and sodium hydroxide is a saponification reaction. triglyceride + sodium hydroxide (or potassium hydroxide) → glycerol + 3 soap molecules.

Saponification can occur in oil paintings over time, causing visible damage and deformation. The ground layer or paint layers of oil paintings commonly contain heavy metals in pigments such...

Alcohol obtained by the process of sponification is –

(a) Ethyl alcohol (b) Methyl alcohol

(c) Wood siprit (d) Glycerol

Ans. (d) [SSC CHSL Exam, 2013]

Expl:- Glycerol is obtained from the process sponification it's a kind of sugar alcohol.

100. Soap Helps in better cleaning of clothes because:

(a) It gives strength to solution

(b) It reduces the surface tension of solution

(c) Soap acts like catalyst

(d) It absorb the dirt.

Ans. (b) [SSC CHSL Exam, 2015]

Expl:- Soap helps in the better cleaning of cloths because it reduces the surface tension of solution.

101. The antiseptic compound present in Dettol is –

(a) Iodine (b) Cresol

(c) Biothional (d) Enloroxylenol

Ans. (d) [SSC CGL Exam, 2013]

Expl:- Dettol contains the antiseptic compound enloroxylenol constituted by pine oil. Castor oil, enloraxylenol etc.

102. Main constituent of Liquid Bleach is –

(a) Hydrochloric acid

(b) Sodium chloride

(c) Sodium Hypochlorate

(d) Sodium Hypochlorite

Ans. (d) [SSC CHSL Exam, 2015]

Expl:- Sodium Hypochlorite is a Liquid having sharp smell of chlorine. Normally it is colourless but in strong some solutions it displays yellow and green colour. It's also known as Bleach, chlorax and Javex.

103. Caustic Soda is –

(a) Deliquescent (b) Oxidant

(c) Reductant (d) Effloresecent

Ans. (a) [SSC CHSL Exam, 2012]

Expl:- Sodium Hydroxide also known as caustic soda. Its soluble in water, ethanol, methanol. It's a deliquescent base and absorb moisture and Co_2 from air.

104. Which one of the following gas is not a part of atmosphere?

(a) Nitrogen (b) Helium

(c) Chlorine (d) None of these

Ans. (c) [SSC CPO Exam, 2008]

Expl:- Nitrogen is present in 78%, oxygen is 21% and carbon dioxide, water vapour and Nobel gases are 1%. Chlorine is not the part of atmosphere.

105. Which of the following is second most abundant element on the surface of sun beside Hydrogen?

(a) Helium (b) Neon

(c) Argon (d) Oxygen

Ans. (a)

Expl:- After Hydrogen, Helium is the Second most abundant element on the surface of sun.

Helium – 24.85% Iron – 0.16%

Carbon – 0.29% Neon – 0.12%

106. Aluminum can be purified by –

(a) Oxidation (b) Electrolysis

(c) Ozonolysis (d) Distillation

Ans. (b) [SSC CPO Exam, 2006]

Expl:- Purification of aluminum is carried out by the process of the Hoopes by electrolysis. In these fluorides of sodium, Barium and aluminum mixed together and this molten mixture act as an electrolyte.

107. Who was the first to explain hydrogen spectrum?

(a) Dalton (b) Neils Bohr

(c) Rutherford (d) J.J. Thomson

Ans. (b)

Expl:- Neils Bohr was the first to explain Hydrogen spectrum there are five series in Hydrogen spectrum.

1. Hyman series 2. Balmer Series
3. Paschen Series 4. Brackett Series
5. P fund Series

108. Dry powder fire extinguisher contains –

(a) Sand

(b) Sand and sodium carbonate

(c) Sand and potassium carbonate

(d) Sand and sodium bicarbonate

Ans. (d) [SSC CPO Exam, 2010]

Expl:- Normally Sand and sodium bicarbonate is used in dry Powder fire extinguisher.

109. Carbon dioxide is a –

(a) Oxidant (b) Reductant

(c) Dehydrated agent (d) Bleaching agent

Ans. (c) [SSC MTS Exam, – 2008]

Expl:- Carbon dioxide is a dehydrating agent.

110. The most abundant Nobel gas in the atmosphere is –

(a) Helium (b) Neon

(c) Argon (d) Krypton

Ans. (c) [SSC CPO Exam, 2008]

Expl:- Except Redan, all Nobel gases are present in the atmosphere and out of them argon is most abundant.

111. The most abundant element on the earth is–

(a) Calcium (b) Silicon

(c) Oxygen (d) Nitrogen

Ans. (c) [SSC CPO Exam, 2010]

Expl:- Oxygen is the most abundant element on the earth crust with 46.6%, but in the universe Hydrogen is most abundant element.

112. The toxic gas present in the smoke exhausted by cars is

(a) CO (b) CO_2

(c) C_2H_4 (d) CH_4

Ans. (a) [SSC MTS Exam, – 2008]

Expl:- Car and other automobiles exhaust mainly contains (CO), lead and SO_2 and out of these CO is most toxic.

113. Pollutant from Motor car exhaust that causes mental disease is –

(a) Lead (b) NO_2

(c) SO_2 (d) Hg

Ans. (a) [SSC CHSL Exam, 2010]

Expl:- Lead is the pollutant exhausted from mother car that causes mental disease.

114. Potential of air pollution increases when the ventilation coefficient is –

(a) >11,000 m^2/s (b) >7600 m^2/s

(c) <3,600 m^2/s (d) 6600m^2/s

Ans. (a) [SSC Steno Exam, 2012]

Expl:- Potential of air pollution increases when the ventilation coefficient is reaches to level >11,000 m^2/s.

115. Denatured spirit is ethanol mixed with–

(a) Petrol (b) Kerosene

(c) Water (d) Pyridine

Ans. (d) [SSC Sec off. 2007]

Expl:- Denatured spirit is ethanol mixed with pyridine. It is not potable. It is used as a solvent.

116. The chief source of naphthalene is –

(a) Coaltar (b) Diesel

(c) Charcoal (d) Champor

Ans. (a) [SSC CHSL Exam, 2012]

Expl:- Coaltar is the chief source of Naphthalene.

117. In which year Chernobyl nuclear power plant of the former USSR had accident that caused escape of radio nuclides into atmosphere?

(a) 1979 (b) 1980

(c) 1984 (d) 1986

Ans. (d) [SSC CGL Exam, 2012]

Expl:- Accident at Chernobyl nuclear power plant occoured on April 26 in 1986.

118. Nobel gas used in the treatment of cancer is–
(a) Helium (b) Argon
(c) Krypton (d) Redan
Ans. (d) [SSC CGL Exam, 2011]

Expl:- Redan is a radioactive element. It is used in Radiotherapy in the treatment of cancer.

119. Taj Mahal is said to be suffering from "Marble Cancer". What is marble Cancer?
(a) Smokes Filling the Taj Mahal from adjoining industries.
(b) Acidic rain which corrodes Marble
(c) Large no of fungus in Taj Mahal Marbles
(d) Yellowing of marble on account of soot particles.
Ans. (b)

Expl:- The marble cancer refers to the corrosion of building and statues made up of marbles by the action of sulphuric acid and Nitric acid. Acid rain is the cause of 'Marble Cancer' of Taj Mahal. It's one of the wonder 'Seven Wonders' of the World. UNESCO declared it as world heritage site in 1983.

120. Activated sludge treatment is called –
(a) Preliminary treatment
(b) Biological treatment
(c) Pretreatment
(d) Chemical treatment
Ans. (b) [SSC CHSL Exam, 2012]

Expl:- Activated sludge treatment is the process of treatment of waste water and sewage water. It is a biological treatment.

121. Old oil painting becomes black due to the formation of–
(a) Cus (b) PbS
(c) CaS (d) Na_2S
Ans. (b)

Expl:- Old oil paintings becomes black due to the formation of Lead sulphide and H_2O_2 (Hydrogen Peroxide) is used in the restoring of the discoloured oil painting.

122. Concentration of a material which is Lethal to 50% animal is called as –
(a) LD50
(b) LC50
(c) NOAEL
(d) ADI
Ans. (b) [SSC CHSL Exam, 2014]

Expl:- Concentration of a Material which is Lethal to 50% animal is called lethal concentration. Complete name of LC is lethal concentration. LC value is mainly used to measure the chemical substances in air but in environmental study it is used to find the concentration of chemical substances in water.

SCIENCE AND BIO TECHNOLOGY

1. The drug which Lowers anxiety and provide Peace –
(a) Tranquilizer (b) Diuretics
(c) Pain killer (d) Antihistamine
Ans. (a) [SSC CGL Exam, 2012]

Expl:- Tranquilizer drug affect the central nervous system and reduce the anxiety and provide peace.

2. The branch of medicine involving synthetic chemical compounds is–
(a) Allopathic (b) Homeopathy
(c) Unani (d) Ayurveda
Ans. (a) [SSC CGL Exam, 2014]

Expl:- Allopathic is the branch of medicine which involving synthetic chemical compound.

3. The pair of compounds used as anesthetic in medicine is –
(a) Nitrogen Dioxide, Chloroform
(b) Chloroform and Nitrogen Dioxide
(c) Nitrogen Dioxide and ether
(d) Ether and Ammonia
Ans. (a) [SSC CGL Exam, 2014]

Expl:- Nitrous oxide and chloroform used as anesthetic in medicines.

4. Fluid used commonly in making Bio-gas –
(a) Animal Waste (b) Aquatic Plants
(c) Plant waste (d) None of these
Ans. (a) [SSC FCI Exam, 2012]

Expl:- Animal Waste is considered as a main raw material for the biogas plant.

5. Gobargas mainly contains –
(a) Carbon Monoxide (b) Carbon dimonoxide
(c) Hydrogen sulphide (d) Methane
Ans. (d) [SSC MTS Exam, – 1999, SSC CPO Exam, 2005]

Expl:- Composition of Biogas is as follows–
Methane – 55%
Hydrogen – 7.4%
Carbon dioxide – 35%
Nitrogen – 2-6% + Some part of H_2S

6. Main constituent of biogas is –
(a) Oxygen (b) Methane
(c) Acidic Acid (d) Methyl alcohol
Ans. (b) [SSC Tax Asst, 2008]

Expl:- Methane is a chemical compound with the chemical formula CH. It is a group 14 hydride and the simplest alkane, and is the main constituent of natural gas.

Methane is the main constituent (63%) of the biogas. (The other major constituent is CO_2=30%. It is known by various names such as biofuel,sewerage gas, Klar gas, Sludge gas, gobar...

7. Which one of the following is the constituent of teargas?

(a) Ethane (b) Ether
(c) Ethanol (d) Chloropicrin

Ans. (d)

Expl:- Chemical formula of chloropicrin is ccl_3NO_2. It is a toxic chemical and tear gas. It is harmful for skin and respiratory system. In 3-30 seconds contact of eyes with 0.3–0.37 ppm chloropicrin causes pain and tears in eyes. It is used by allied forces.

8. Main Constituent of air is–

(a) Nitrogen (b) Carbon dioxide
(c) Oxygen (d) Hydrogen

Ans. (a) [SSC Tax asst. Exam, 2007]

Expl:- Nitrogen is the main constituent of air. The composition of air is as follows.

Nitrogen – 78%, Oxygen – 21%, CO_2 and other gases – 1%

9. Which of the following element has its least percentage in ecosystem in nature?

(a) Nitrogen (b) Carbon
(c) Phosphorous (d) Hydrogen

Ans. (a) [SSC Steno Exam, 2005]

Expl:- a colorless, odorless, gaseous element that constitutes about four-fifths of the volume of the atmosphere and is present in combined form in animal and vegetable tissues, especially in proteins: used chiefly in the manufacture of ammonia, nitric acid, cyanide, explosives, fertilizer, dyes, as a cooling agent, etc. Symbol: N; atomic weight:14.0067; atomic number: 7; density: 1.2506g/l at 0°C and 760 mm pressure.

Our atmosphere contains roughly (by volume) 78.09% nitrogen, 20.95% oxygen, 0.93% argon, 0.039% carbon dioxide, and small amounts of other gases.

10. Which one of the following element is an Example of noble gas?

(a) Nitrogen (b) Hydrogen
(c) Chlorine (d) Helium

Ans. (d) [SSC CHSL Exam, 2014]

Expl:- P-block elements in periodic tables known as noble gases such as Helium, Neon, Argon, Krypton, Xenon.

11. Wheat harvesting is an Example of–

(a) Gravity separation
(b) Chromatographic separation
(c) Fractional distillation
(d) Extraction

Ans. (a) [SSC Steno Exam, 2016]

Expl:- Wheat Harvesting is an Example of gravity separation. In this method constituent with different densities are separated from their mixture.

12. Zinc Phosphide is commonly used as –

(a) Fungicide (b) Herbicide
(c) Rodenticide (d) None of these

Ans. (c) [SSC Tax Asst Exam, 2008]

Expl:- Zinc Phosphide is commonly used as Rodenticide

13. Oxides of sulphure present in atmosphere washed down by rain to cause–

(a) Industrial Smog
(b) Depletion of fossil fuel reserves
(c) Eutrophication in Lakes
(d) Lowering of PH of soil

Ans. (d) [SSC GD Exam, 2015]

Expl:- Oxides of sulphur present in atmosphere washed down by rain to lower down the PH of soil. Amount of sulphur required depends upon the nature of soil.

14. Green House effect means –

(a) Forming in green Houses for the conservation of energy.
(b) Trapping of solar energy due to carbon dioxide.
(c) Trapping of solar energy by the upper layer of earth.
(d) Increase in temperature due to atmospheric pollution.

Ans. (b) [SSC MTS Exam, 2015]

Expl:- Green house effect is the increase in temperature of earth due to presence of CO_2, water vapours, N_2O and CH_4 etc. and these gases absorb the sunlight, it these sun rays reflects back to space without heating earth, then temperature of earth becomes 60°F. Due to this effect these goes are called Green House gas.

15. Which one of the following is not a Green House gas?

(a) Hydrogen (b) Carbon dioxide
(c) Nitric Oxide (d) Chlorofluro carbon

Ans. (a) [SSC Tax Asst. Exam, 2007]

Expl:- Green House gases are mainly carbon dioxide, methane, chlorofluoro carbons, Nitric oxide and water vapours in which CO_2 is 60%, methane is 20%, Nitrous oxide is 6% and chlorofluoro carbon is 14%.

16. Which one of the following groups of gases contributes to Green House effect?

(a) Carbon dioxide and Methane
(b) Ammonia and Ozone
(c) Carbon Monoxide and sulphure dioxide

(d) Carbon tetrafluoride and Nitrous oxide

Ans. (a) [SSC CHSL Exam, 2013]

Green House Gas is–

(a) Carbon dioxide (b) Sulphure dioxide

(c) Nitric Oxide (d) Ethane

Ans. (a) [SSC MTS Exam, – 2008]

Which of the following atmospheric gas is responsible for the Green House effect?

(a) Ozone (b) Nitrogen

(c) Oxygen (d) Carbon dioxide

Ans. (d) [SSC FCI Exam, 2012]

Expl:- The greenhouse effect is the process by which radiation from a planet's atmosphere warms the planet's surface to a temperature above what it would be without its atmosphere. If a planet's atmosphere contains radiatively active gases (i.e., greenhouse gases) the atmosphere will radiate energy in all directions.

Which of the following atmospheric gases are green House gases.

1. Carbon dioxide 2. Nitrogen
3. Nitrous Oxide 4. Water vapours

(a) 1,3 and 4 (b) 1 and 4

(c) 1 and 3 (d) 1, 2 and 4

Ans. (a) [SSC MTS Exam, – 2013]

Expl:- Nitrogen – 78 percent, Oxygen – 21 percent, Argon – 0.93 percent, Carbon dioxide – 0.038 percent

Depletion of ozone Layer is mainly due to –

(a) Radioactive radiation

(b) Chlorofluoro carbons

(c) Aviation Fuels

(d) Volcanic eruptions

Ans. (b) [SSC CHSL Exam, 2013]

Expl:- Depletion of ozone cause mainly by Halogenated gases. Halogenated gases are mainly chlorofluoro carbons and Nitrogen oxides. Maximum depletion of ozone layer caused by chlorofluoro carbons.

Which atmospheric gas absorbs ultraviolet rays?

(a) Ozone (b) Methane

(c) Nitrogen (d) Helium

Ans. (a) [SSC MTS Exam, – 2011]

Expl:- Ozone gas in atmosphere absorb ultraviolet rays that is why these rays did not reach directly on the earth.

Which of the following affect more 'Green House effect'?

(a) Ozone (b) Carbon Monoxide

(c) Carbon dioxide (d) Water vapours

Ans. (d) [SSC MTS Exam. – 2011]

Expl:- Contribution of Water vapours in Green House effect is 36–72% while carbon dioxide contribute a – 26%.

Which one of the following fuel causes Least environmental Pollution?

(a) Hydrogen (b) Coal

(c) Diesel (d) Kerosene

Ans. (a) [SSC CPO Exam, 2015]

Expl:- Hydrogen is the least pollution causes fuel. It is used in electro chemical cells and internal combustible engines. It is also used in electric vehicles and electric appliances.

Pasteurization is a process in which milk is Heated at–

(a) At 60°C for 10 min (b) 63°C for 20 min

(c) 63°C for 30 min (d) 72°C for 10 min

Ans. (c) [SSC Sec off. Exam, 2007]

Expl:- Pasteurization is a process in which milk is heated at 63°C for 30 min and then cools rapidly. By this microbe of Lactic acid reduced and disease causing microorganism died.

Combustion is a –

(a) Biological Process (b) Physical Process

(c) Chemical Process (d) Physical and chemical process

Ans. (c) [SSC CGL Exam, 2014]

Expl:- Combustion is a chemical process. Its take place due to fuel and oxygen. Light energy and Heat energy produced during this reaction.

Which one of the following gas is most toxic?

(a) Carbon dioxide (b) Carbon monoxide

(c) Sulphure dioxide (d) Chlorine

Ans. (b)

Expl:- Carbon monoxide gas is most toxic from the given options. It is exhausted from automobiles cigarette. It reduced the oxygen carrying capacity of blood.

Which of the following gas is exhausted by automobiles cause air pollution and Mainly Harmful.

(a) Carbon Monoxide (b) Methane

(c) Carbon dioxide (d) Ozone gas

Ans. (a) [SSC Tax Asst. Exam, 2007]

Expl:- Carbon monoxide (CO) is a colorless, odorless, and tasteless gas that is slightly less dense than air. It is toxic to hemoglobic animals (both invertebrate and vertebrate, including humans) when encountered in concentrations above about 35 ppm, although it is also produced in normal animal metabolism in low quantities, and is thought to have some normal biological functions. In the atmosphere, it is spatially variable and short lived, having a role in the formation of

28. **Chief pollution of smoke of cigarette is–**

(a) Carbon monoxide and Dioxin
(b) Carbon monoxide and Nicotine
(c) Carbon monoxide and Benzene
(d) Dioxin and Benzene

Ans. (b) [SSC Tax Asst. 2008]

Expl:- Carbon monoxide and nicotine are the main pollutant present in cigarette smoke carbon monoxide reduced the oxygen carrying capacity of blood and nicotine is carcinogenic carbon monoxide is main air pollutant.

Through the use of cigarettes, cigars, and chewing tobacco, nicotine is one of the most heavily used addictive drugs in the United States. Nicotine is the primary component of tobacco, and is the primary reason that tobacco is addictive.

29. **Smoke of tobacco is Injurious to Health because it contains –**

(a) Carbon Monoxide
(b) Nicotine
(c) Polycyclic Hydro carbon
(d) Methylene

Ans. (b) [SSC Steno Exam, 2010]

Expl:- Nicotine is "A poisonous volatile alkaloid derived from tobacco (Nicotiana spp.) and responsible for many of the effects of tobacco; it first stimulates (small doses), then depresses (large doses) at autonomic ganglia and myoneural junctions. Its principal urinary metabolite is cotinine. Nicotine is an important tool in physiologic and pharmacologic investigation, is used as an insecticide and fumigant, and forms salts with most acids."

30. **Producer gas is Highly Poisonous due to the presence of–**

(a) Nitrogen (b) Carbon Monoxide
(c) Hydrogen sulphide (d) Sulphur dioxide

Ans. (b) [SSC MTS Exam, – 2014]

Expl:- Producer gas is a mixture of gases mainly nitrogen and carbon monoxide. Due to carbon monoxide its Highly poisonous.

31. **Which gas causes suffocation and death when coal is burned in a closed room?**

(a) Ethane (b) Carbon dioxide
(c) Carbon Monoxide (d) Methane

Ans. (c)

Expl:- When coal is burned then carbon mono oxide evolved in large amount, which causes death and suffocation in a closed room. It's a colourless, odourless and poisonous gas.

32. **It is not advisable to sleep under the tree at night because trees release–**

(a) Carbon dioxide (b) Oxygen
(c) Carbon monoxide (d) Sulphure dioxide

Ans. (a) [SSC CPO Exam, 20

Expl:- Atmospheric carbon dioxide is the primary source of carbon in life on Earth and its concentration in Earth's pre-industrial atmosphere since late in the Precambrian was regulated by photosynthetic organisms and geological phenomena. As part of the carbon cycle, plants, algae, and cyanobacteria use light energy to photosynthesize carbohydrate from carbon dioxide and water, with oxygen produced as a waste product.

33. **Air pollutant contains –**

(a) Radiations and gases
(b) Only Liquid
(c) Only gases
(d) Only radiations

Ans. (a) [SSC MTS Exam, – 20

Expl:- Different gases in the atmosphere are found in a definite quantity out of them nitrogen 78.09% oxygen 20.95%, argon 0.93% and carbon dioxide 0.03% are main gases. Due to some natural or artificial causes add some toxic substances in air, this is known as air pollution.

Carbon dioxide is a colorless and odorless gas that is vital to life on Earth. This naturally occurring chemical compound is made up of a carbon atom covalently double bonded to two oxygen atoms.

34. **The calorie requirement of the body increases in winter as compared to summer because more calories are necessary to–**

(a) Sustain body temperature
(b) Break more proteins
(c) Make more fat in the body
(d) Compensate for falling hair.

Ans. (a) [SSC CPO Exam, 20

Expl:- The calories requirement of the body increases in winter as compared to summer because more calories are necessary to sustain body temperature.

35. **Micro organism which monitor the air pollution–**

(a) Bacteria (b) Lichen
(c) Alage (d) Fungi

Ans. (b) [SSC CHSL Exam, 20

Expl:- Lichens are organism comprising both Fungi and Algae they are found on rocks and tree trunks. Lichen can be used as air pollution indicator.

36. **Catalyst are those substances –**

(a) Which increase rate of reaction
(b) Which decrease rate of reaction
(c) Does not affect the rate of reaction
(d) None of these

[SSC CPO Exam, 2006]

Ans. (a)

Expl:- Catalyst is a substance which increases the rate of reaction but itself remains unaffected chemically.

Substance used highly as a food preservative –

(a) Sodium carbonate
(b) Tartaric acid
(c) Acetic acid
(d) Sodium salts of benzoic acids

Ans. (d) [SSC Tax Asst. 2006, SSC MTS Exam, – 2002, 2008]

Expl:- Sodium benzoate is used as a preservative in pickle, Fruit sauce, marmalade and in some other food substances.

Super Sonic Jet causes pollution by thinning of–

(a) O_3 Layer (b) SO_2 Layer
(c) O_2 Layer (d) CO_2 Layer

Ans. (a) [SSC CGL Exam, 2011]

Expl:- Supersonic Jet causes pollution by thinning Layer of O_3 (three) Ozone Layer protect earth from ultraviolet radiation coming direct from sun.

Bhopal Gas Tragedy was caused by –

(a) Nitrogen (b) Carbon Monoxide
(c) Chlorine (d) Methyl Isocyanite

Ans. (d) [Steno Exam, 2011, SSC Tax Asst. 2006, SSC MTS Exam, – 2002]

Expl:- It occoured on Night of 2 -3 December 1984 at union carbide company plant in Bhopal, Madhya Pradesh, due to the leakage of Harmful gas and that goes was methyl isocyanite around 2500 people died in that accident.

Which pollutant is mainly responsible for the Bhopal Gas tragedy?

(a) Methyl Isocyanite
(b) Chlorine
(c) Bromein
(d) Chloro Fluro carbon

Ans. (a) [SSC CHSL Exam, 2013]

Expl:- Methyl isocyanate is an intermediate chemical in the production of carbamate pesticides (such as carbaryl, carbofuran, methomyl, and aldicarb). It has also been used in the production of rubbers and adhesives. As a highly toxic and irritating material, it is extremely hazardous to human health.

Ozone Contains–

(a) Only oxygen
(b) Oxygen and Nitrogen
(c) Hydrogen and Carbon
(d) Oxygen and Carbon

Ans. (a) [SSC CPO Exam, 2009]

Expl:- Chemical formula of Ozone is O_3. It is formed by the electric immersion of dry oxygen. It is used in the making of artificial fiber, champor and to prevent ediable substance. Its colour is blue.

42. Freon is used as a –

(a) Insecticide (b) Herbicide
(c) Fungicide (d) Coolant

Ans. (d) [SSC MTS Exam, – 2006]

Expl:- Freon is a compound made up of carbon, florine and chlorine. Its chemical formula is CF_2Cl_2. It is used as a Coolant.

43. Coolant 'Freon' is–

(a) Calcium Tetra Fluoride
(b) Dichloro Methane
(c) Hydro flocilic acid
(d) None of these

Ans. (b) [SSC CGL Exam, 2011]

Expl:- Dichloro Fluoro Methane is an odourless gas which is used as a coolant. Its commercial name is Freon–12.

44. Which of the following gas is used for the artificial riping of Fruits?

(a) Ethylene (b) Ethane
(c) Methane (d) Acetylene

Ans. (a)

Expl:- Ethylene is considered as the best gas for the airtificial riping of fruits. It's a gaseous plant Hormone.

45. Which gas is used for the artificial riping of Green Fruits?

(a) Ethyne (b) Ethylene
(c) Ethane (d) Methane

Ans. (b) [SSC CPO Exam, 2005, SSC CGL Exam, 2006, 2008]

Expl:- Ethylene is also an important natural plant hormone, used in agriculture to force the ripening of fruits. Ethylene's hydrate is ethyl alcohol.

46. Aspirin is common name of–

(a) Salicylic acid (b) Acetylsalicylic acid
(c) Methyl Salicylate (d) Acetyl salicylic acid

Ans. (b) [SSC CPO Exam, 2009]

Expl:- Aspirin, also known as acetylsalicylic acid (ASA), is a medication used to treat pain, fever, and inflammation. Specific inflammatory

47. Chemical name of Gamma xene is –

(a) Tolune (b) Chlorobenzene
(c) Aniline (d) Benzene Hexa Chloride

Ans. (d) [SSC CPO Exam, 2015]

Expl:- Chemical name of Gammaxene is Benzene Hexa chloride. It's also known as lindane. It is an insecticide chemical.

48. Which of the following known as marsh gas?

(a) Co (b) Co_2

(c) CH_4 (d) H_2

Ans. (c)

Expl:- Methane is called Marsh gas and its chemical formula is CH_4.

49. Which one of the following is a biochemical Sediment rock?

(a) Marble (b) Coal

(c) Granite (d) Slate

Ans. (b) [SSC MTS Exam, – 2006]

Expl:- Depending upon the quantity of carbon Coal are of four types.

1. Peat coal
2. Lignite coal
3. Bituminous coal
4. Anthracite Coal

Anthracite is the best type of coal. Coal is a biochemical sediment rock.

50. Main Gaseous pollutant of thermal power plants is–

(a) H_2S (b) NH_3

(c) NO_2 (d) SO_2

Ans. (d) [SSC Tax Asst. Exam,2009]

Expl:- Sulphur dioxide is produced by burning of coals at thermal power stations, so its main gaseous pollutant. It's the main constituents of smog and acid rain.

51. Which one of the following gases mixed oxygen in aqualungs used by divers for the breathing?

(a) Methane (b) Nitrogen

(c) Helium (d) Hydrogen

Ans. (c) [SSC MTS Exam, – 2002, SSC CHSL Exam, 2011]

Expl:- A mixture of oxygen and Helium in ratio 1:4 provided to divers because of its very low solubility in blood. Patient having respiratory problems also given this mixture.

52. Acid rain destroy vegetation because it contains –

(a) Nitric Acid (b) Ozone

(c) Carbon Monoxide (d) Sulphuric acid

Ans. (d) [SSC Tax Asst. Exam,2006]

Expl:- Acid rain contains more sulphuric acid (H_2SO_4), which destroy the vegetation.

53. A hard fluid present in smog which causes irritation in eyes is–

(a) Nitric Acid (b) Sulphur dioxide

(c) Peraxyacetyl Nitrate (d) Carbon dioxide

Ans. (c) [SSC CHSL Exam, 20

Expl:- Ozone and Peraxyacetyl Nitrate (PAN) form smog by combining. Ozone harms the cloths and Rubber while PAN causes irritation in eyes.

54. Acid rain caused by–

(a) NO_2 and O_2 (b) CO and CO_2

(c) SO_2 and O_2 (d) SO_2 and NO_2

Ans. (d) [SSC CGL Exam, 20

Expl:- Acid rain caused by the gaseous pollutant SO_2 and NO_2 present in atmosphere. In air sulphur dioxide (SO_2) reacts with water (H_2O) to form sulphuric acid (H_2SO_4) and Nitrogen dioxide (NO_2) react with water to from Nitric acid (HNO_3).

55. Acid rain is caused due to pollution of atmosphere by–

(a) Oxides of carbon and Nitrogen

(b) Oxides of Nitrogen and Phosphorous

(c) Oxides of Nitrogen and Sulphur

(d) None of these

Ans. (c) [SSC CPO Exam, 20

Expl:- Acid rain is caused by a chemical reaction that begins when compounds like sulfur dioxide and nitrogen oxides are released into the air. These substances can rise very high into the atmosphere, where they mix and react with water, oxygen and other chemicals to form more acidic pollutants, known as acid rain.

56. When H_2 gas is allowed to expand from a region of High pressure to a region of Low pressure the temperature of gas–

(a) Decreases to a small extent

(b) Increases

(c) Does not change

(d) Decreases suddenly.

Ans. (b) [SSC CGL Exam, 20

Expl:- When Hydrogen is allowed to expand from a region of High pressure to low pressure at room temperature, the temperature of gas increases.

57. Example of Aerosol is –

(a) Milk (b) River water

(c) Smoke (d) Blood

Ans. (c) [SSC FCI Exam, 20

Expl:- Aerosol is a suspension of solid particle and Liquid droplets in gas clouds, smog, smoke etc are the Examples of Aerosol.

58. Ethyene is an Example of compound–

(a) Triple bond (b) Single bond

(c) Double bond (d) Coordinating bond

Ans. (a) [SSC MTS Exam, – 20

Expl:- Ethyene is a carbonic compound having triple bond.

The inert gas used as beacon Light is –

(a) Krypton (b) Argon
(c) Helium (d) Neon

Ans. (d) [SSC CHSL Exam, 2014]

Expl:- Neon is the inert gas used as beacon Light. Neon Light appears from very large distance. Even in winters during Heavy fog neon Light can appear. That is why in Beacon Neon gas is used.

Hydrogen was discovered by –

(a) Boyle (b) Charles
(c) Cavendish (d) Priestley

Ans. (c) [SSC CGL Exam, 2014]

Expl:- Hydrogen was discovered by Henry Cavendish in 1766.

Liquid Chemical used for artificial rain or cloud seeding–

(a) Silver Iodide (AgI) (b) Sodium Chloride (Nacl)
(c) Dry ice (Solid CO_2) (d) All the these

Ans. (d) [SSC CPO Exam, 2010]

Expl:- Silver iodide, sodium chloride and dry ice are oftenly used fluid chemical for artificial rain or cloud seeding.

Which of the following is used as raw material for the manufacture of rayon?

(a) Coal (b) Petroleum
(c) Cellulose (d) Plastic

Ans. (c) [SSC CHSL Exam, 2015]

Expl:- Rayon is the fiber made up of cellulose because it is produced by the natural polymers so it's neither completely chemical fiber nor natural fiber so it's known as semi-Artificial Fiber.

Which of the following gas is used to destroy the microbes?

(a) Chlorine (b) Oxygen
(c) Hydrogen (d) Neon

Ans. (a) [SSC Steno Exam, 2005]

Expl:- Chlorine used in water treatment as disinfectant. Chlorine destroys the microbes present in water. It is also used in the manufacturing of bleaching powder and as a bleaching agent.

Paper is made by–

(a) Cellulose of plants (b) Plants flower
(c) Fruit Juice (d) Proteins of Plants

Ans. (a) [SSC FCI Exam, 2012]

Expl:- Cellulose is mainly used to produce paper board. Paper is a thin material produced by pressing together moist fiber of cellulose pulp derived from wood, rags or grasses and then drying them into flexible sheets.

65. Litmus is obtained from –

(a) A bacterium (b) A fungus
(c) An alga (d) Lichen

Ans. (d) [SSC Tax Asst. Exam, 2008]

Expl:- Lichen is obtained from a Lichen. It is used as an acid indicator.

66. Which gas is used as a disinfectant in drinking water?

(a) Hydrogen (b) Oxygen
(c) Fluorine (d) Chlorine

Ans. (d) [SSC CGL Exam, 2006]

Expl:- Chlorine is in many household cleaners, it's used as a fumigant, and, since it impedes the growth of bacteria like e. coli and giardia, and is often added to water systems as a disinfectant. Subsequently, much exposure happens by drinking treated tap water. While disinfection of drinking water is a necessary measure to reduce diseases, concerns have been raised about the safety of chlorine, which has been linked to serious adverse health effects, including dementia in elderly patients.

67. Which is widely used in the plastic industry for manufacturing Bakelite?

(a) Ethyl Alcohol (b) Phenol
(c) Orth-cresol (d) Catechol

Ans. (b) [SSC See off. Exam, 2006]

Expl:- Bakelite is a synthetic Fiber made up from Phenol and Polymer Formaldehyde. It was first formed by Leo Backland in 1907.

68. Black Lung disease occours in people working in –

(a) Electroplating industry
(b) Organic solvent industry
(c) Paint Manufacturing industry
(d) Coal mines

Ans. (d) [SSC CHSL Exam, 2011]

Expl:- Black Lung diseases is a common disease for lungs develops due to inhaling of coal dust for working long time in coal mines.

69. Burning of candle is a –

(a) Photo chemical reaction
(b) Physical change
(c) Exothermic reaction
(d) Endothermic reaction

Ans. (c) [SSC MTS Exam, – 2014]

Expl:- Candle is made up of Hydro carbon named as Paraffin. When it burns in presence of oxygen then it converted in to carbon dioxide and water. It is known as exothermic reaction becau... evolved CO_2, H_2O with release heat in the atmosphere.

70. In the Industrial production of vegetable ghee, the process involved is –

(a) Dissociation (b) Reduction

(c) Oxidation (d) Ionization

Ans. (b)

Expl:- Vegetable oils are converted into vegetable ghee when vegetable oils are heated in the presence of catalyst Ni/Pd and this process is known as Hydrogenation.

Vegetable oil + H_2 $\xrightarrow[Ni]{\text{uuuuuu}}$ Vegetable ghee

Now a day's reduction is the process used in the industrial production of vegetable ghee. People used this as an edible.

71. Gas used in the production of vegetable ghee is–

(a) Hydrogen (b) Helium

(c) Oxygen (d) Nitrogen

Ans. (a) [SSC FCI Exam, 2012]

Expl:- Hydrogen Gas is used in the process Hydrogenation.

72. Cooking oil is converted into vegetable ghee by the process of–

(a) Hydrogenation (b) Oxidation

(c) Condensation (d) Crystallization

Ans. (a) [SSC CPO Exam, 2011]

Expl:- Food companies began using hydrogenated oil to help increase shelf life and save costs. Hydrogenation is a process in which a liquid unsaturated fat is turned into a solid fat by adding hydrogen. During this processing, a type of fat called trans fat is made.

73. In a reaction of type A + B → C + D one could ensure it, to be a First order reaction by–

(a) Increasing the concentration of a Product

(b) Increasing the concentration of a reactant

(c) Increasing the temperature

(d) Adding a catalyst

Ans. (a) [SSC CHSL Exam, 2015]

Expl:- In a reaction of type A+B → C+D one could ensure it to be a first order reaction by increasing the concentration of product.

74. Bagasse is used in the manufacturing of–

(a) Paper (b) Plastic

(c) Paint (d) Varnish

Ans. (a) [SSC FCI Exam, 2012]

Expl:- Bagasse is the dry pulpy residue left after the extraction of Juice from sugar cane. Now a days, it is used as a Bio Mass or as a Renewable Source in the Production of paper.