CHEMISTRY

1. The smallest particle of matter is an atom but it cannot remain in an independent state, an atom is a smaller particle than a molecule.

(a) Atom (b) Neutron

(c) Electron (d) Molecules

Answer - (d)

RRB Group-D 08-10-2018 (Shift-I)

Molecules are the smallest particles that display the properties of substances.

2. Atoms chemically combine to become .....?

(a) Molecules

(b) Element

(c) Both element and alloy

(d) Alloy

Answer - (a)

RRB JE 25.05.2019 (Shift-III)

Atoms join to form molecules.

3. Rusting of iron is a common example of which?

(a) Physical change

(b) Exothermic change

(c) Heat change

(d) Chemical changes

Answer - (d)

RRB Group-D 01-10-2018 (Shift-II)

Rusting involves formation of new substances.

4. Which of the following is not an example of chemical change?

(a) Digestion of food in the body

(b) Making curd form milk

(c) Change of water into water vapor

(d) Rusting of iron

Answer - (c)

RRB Group-D 01-10-2018 (Shift-II)

Change of state is physical change.

5. Which of the following is a chemical change?

(a) Souring of Butter

(b) Making of dry ice from CO_2

(c) Heating a platinum wire

(d) Iron magnetization

Answer - (a)

RRB ALP & Tec. (29-08-18 Shift-I)

Souring involves formation of new substances.

6. Which of the following observations helps us to determine whether a chemical reaction has taken or not?

(a) Change in state

(b) Gas emission

(c) Colour change

(d) All these options

Answer - (d)

RRB Group-D 09-10-2018 (Shift-II)

All the options can indicate a chemical change.

7. When two liquids do not dissolve in each other and do not form a solution, what is it called?

(a) Solvent

(b) Solute

(c) Immiscible

(d) Decantation

Answer - (c)

RRB NTPC 12.04.2016 (Shift-III) Stage I

Such liquids are called immiscible.

8. Which of the following statements is incorrect?

(a) The particles of matter are in steady state.

(b) Particles of matter are very small.

(c) Particles of matter attract each other.

(d) There are some space between particles of matter.

Answer - (a)

RRB ALP & Tec. (13-08-18 Shift-II)

Particles are in continuous motion and not in steady state.

9. ..... is a pure substance?

(a) Sugar solution

(b) Methane

(c) Milk

(d) Air

Answer - (b)

RRB Group-D 24-09-2018 (Shift-I)

(a) Molecules

(b) Electron

(c) Ion

(d) Proton

Answer - (a)

RRB JE 01.06.2019 (Shift-I)

Atoms join to form molecules.

62. How many molecules of water are present in one molecule of copper sulphate?

(a) 5

(b) 6

(c) 3

(d) 4

Answer - (a)

RRB Group-D 10-10-2018 (Shift-I)

$CuSO_4.5H_2O$ has 5 molecules of water.

63. In CaO, the ratio of Ca and O by mass is .....

(a) 5 : 2

(b) 3 : 8

(c) 2 : 5

(d) 8 : 3

Answer - (a)

RRB Group-D 15-10-2018 (Shift-I)

Ratio of Ca:O in CaO is 5:2.

64. Hydrogen and oxygen are present in water by ..... of proportion to the mass.

(a) 3:1

(b) 1:8

(c) 1:2

(d) 8:1

Answer - (b)

RRB Group-D 07-12-2018 (Shift-III)

Ratio of H:O in water is 1:8.

65. The mass of N and H in ammonia is always in the ratio .....

(a) 3 : 14

(b) 8 : 3

(c) 14 : 3

(d) 3 : 8

Answer - (c)

RRB Group-D 11-10-2018 (Shift-III)

Ratio of N:H in NH3 is 14:3.

66. How many atoms are in a molecule of ammonium chloride?

(a) 5

(b) 7

(c) 4

(d) 6

Answer - (d)

RRB Group-D 22-10-2018 (Shift-III)

NH4Cl has total 6 atoms.

67. At standard temperature and pressure, 7.5 grams of gas takes up 5.6 liters of volume. What gas is it?

Six point zero two two times ten to the power of twenty five atoms.

115. How many moles of sulphuric acid are in 25gm?

(a) 255

(b) 0.025

(c) 25

(d) 0.255

Answer - (d)

RRB Group-D 17-09-2018 (Shift-III)

Zero point two five five moles.

116. A molecule of any substance contains 6.023 × 1023 particles. If 3.0115 × 1023 particles are present in CO2, then the number of molecules of CO2 is:

(a) 0.5

(b) 1

(c) 0.25

(d) 2

Answer - (a)

RRB Group-D 28-09-2018 (Shift-I)

Zero point five moles.

117. How many atoms of sulphur are present in 0.6 mole of SO2?

(a) 4.13×1022 Atom

(b) 3.613×1023 Atom

(c) 4.613×1022 Atom

(d) 2.409×1022 Atom

Answer - (b)

RRB Group-D 31-10-2018 (Shift-III)

Three point six one three times ten to the power of twenty three atoms.

118. How many moles are present in 54g in He?

(a) 13.5 mole

(b) 10 mole

(c) 12 mole

(d) 25 mole

Answer - (a)

RRB Group-D 31-10-2018 (Shift-II)

Thirteen point five moles.

119. How many molecules are there in 0.5 mole of KCl?

(a) 3.01×1022

(b) 3.01×1023

(c) 3.01×1024

(d) 3.01×1021

Answer - (a)

RRB Group-D 05-12-2018 (Shift-III)

Three point zero one times ten to the power of twenty two molecules.

120. What is the mass of 10 moles of CO2?

(a) 280

(b) 440

(c) 44

(d) 220

Answer - (b)

RRB Group-D 22-10-2018 (Shift-I)

(a) Addition reaction

(b) Catalytic reaction

(c) Precipitation reaction

(d) Displacement reaction

Answer - (c)

RRB Group-D– 20/09/2022 (Shift-I)

Precipitation reaction produces insoluble salts.

203. What happens when CO gas is passed through the lime water?

(a) The solution turns milky.

(b) Green colour appears.

(c) There is no change.

(d) A black precipitate is formed.

Answer - (a)

RRB Group-D– 16/09/2022 (Shift-III)

CO_2 forms milky white precipitate of $CaCO_3$ in limewater.

204. Which of the following aqueous solutions is formed when copper sulphate solution reacts with zinc metal?

(a) Zinc sulphate

(b) Zinc oxide

(c) Zinc cuprite

(d) Zinc sulphide

Answer - (a)

RRB Group-D– 13/09/2022 (Shift-III)

Zinc sulphate solution is formed in the above reaction.

205. A white precipitate will be formed if we add ammonia solution to :

(a) Mg (NO3)2 solution

(b) Ba (NO3)2 solution

(c) AlCl3 solution

(d) KNO3 solution

Answer - (c)

RRB Group-D– 17/08/2022 (Shift-III)

White ppt of Al(OH)3 forms with aluminium chloride.

206. What is the main product when calcium oxide reacts vigorously with water?

(a) Lime stone

(b) Slaked lime

(c) Hydrogen gas

(d) Quick lime

Answer - (b)

RRB Group-D– 26/08/2022 (Shift-I)

(Slaked lime is calcium hydroxide produced when quicklime reacts with water.)

---

207. When kavita took an aqueous solution of copper sulphate and added some granules of aluminium. the colour of the solution changed. This is because of the formation of :

(a) $Al_2 O_3$

(b) $Al(OH)_3$

(c) $Al_2(SO_4)_3$

(d) CuO

Answer - (c)

RRB NTPC 04.04.2016 (Shift-I) Stage Ist

(Electron has a net negative charge)

---

265. Who discovered the electron?

(a) Niels Bohr

(b) J.J. Thomson

(c) Albert Einstein

(d) Ernest Rutherford

Answer - (b)

RRB NTPC 31.03.2016 (Shift-II) Stage Ist

(J.J. Thomson discovered electron)

---

266. Which of the following particles has positive charge?

(a) neutron

(b) proton

(c) electron

(d) krypton

Answer - (b)

RRB NTPC 29.03.2016 (Shift-II) Stage Ist

(Proton has a positive charge)

---

267. Sub-atomic particles which have opposite properties from normal sub-atomic particles are known as?

(a) positron

(b) anti-particles

(c) photons

(d) neutrinos

Answer - (b)

RRB NTPC 31.03.2016 (Shift-III) Stage Ist

(Anti-particles have opposite properties of normal particles)

---

268. Who discovered the word 'atom'?

(a) Dalton

(b) Kanad

(c) Lavoisier

(d) Democritus

Answer - (d)

RRB Group-D 31-10-2018 (Shift-I)

(Democritus discovered the word 'atom')

---

269. An electron has a negative charge.

(a) 1.6 × 1018 C

(b) 1.6 × 1016 C

(c) 1.6 × 1019 C

(d) 1.6 × 10−19 C

Answer - (d)

RRB JE 29.05.2019 (Shift-I)

(Charge of electron is -1.6 × 10−19 C)

---

270. Neutron is present in all atoms except.....

(a) Cr

(b) H

(c) C

(d) Mg

Answer - (b)

RRB Group-D 10-10-2018 (Shift-III)

(Neutron is absent in hydrogen atom)

---

271. In.....all subatomic particles are present except neutrons.

(a) carbon

(b) nitrogen

(c) hydrogen

(d) oxygen

Answer - (c)

RRB JE 23.05.2019 (Shift-IV)

(Only hydrogen lacks neutron among given options)

---

272. Which of the following is not a sub-atomic particle of atom?

(a) xenon

(b) neutron

(c) proton

(d) electron

Answer - (a)

RRB Group-D 17-09-2018 (Shift-II)

(c) Halogen

(d) Metalloid

Answer - (b)

RRB Group-D 11-10-2018 (Shift-II)

(Outermost shell of metal contains 1 to 3 electrons)

---

329. In the outermost orbit. . . . . , has the same number of electrons.

(a) O, F

(b) As, Bi

(c) H, He

(d) Ar, K

Answer - (b)

RRB Group-D 28-09-2018 (Shift-I)

(As and Bi has same electrons in outer orbit)

---

330. . . . . element has three orbitals with 8 electrons in its outer cell.

(a) Kr

(b) Ne

(c) Xe

(d) Ar

Answer - (d)

RRB Group-D 26-09-2018 (Shift-I)

(Argon has 8 electrons in third orbital)

---

331. In non-metals, usually in the outermost orbit has ..... electrons.

(a) 1, 2 or 3

(b) 5, 6, 7 or 8

(c) 8, 9 or 10

(d) 10 or 18

Answer - (b)

RRB ALP & Tec. (29-08-18 Shift-I)

(Non-metals have 5 to 8 electrons in outer orbit)

---

332. Which of the following elements has a total of 3 shells and 8 electrons in the outer orbit?

(a) S

(b) Al

(c) P

(d) Ar

Answer - (d)

RRB ALP & Tec. (20-08-18 Shift-I)

(Argon has 3 shells and 8 outer electrons)

---

333. If the electronic configuration of elements A and B are 1s22s22p31s23s1 and 1s22s22p31s23p2, so compound produced by combining these elements is.

(a) AB (Sodium)

(b) AB (Sulphur)

(c) A2B3 (Sodium sulphide)

(d) AB

Answer - (c)

RRB ALP & Tec. (21-08-18 Shift-III)

(Combining given elements form Na2S3 compound)

---

334. How many valence electrons does an oxygen atom have?

(a) 2

(b) 6

(c) 8

(d) 16

Answer - (a)

RRB NTPC 10.01.2021 (Shift-II) Stage Ist

(Oxygen has 2 valence electrons)

---

335. Of the elements given below. . . . . is the smallest in size.

(a) Na+

(b) Mg2+

(c) Al3+

(d) All these options

Answer - (c)

RRB Group-D 22-09-2018 (Shift-I)

(Al3+ is smallest among given options)

---

336. Name the three elements whose outermost shell participates in forming N molecule?

(a) M

(b) N

(c) K

Dalton's law applies when two or more gases share a container.

---

406. **Which of the following element is more reactive than copper ?**

(a) Hg (b) Cu

(c) Ag (d) Pt

Answer - (a)

RRB Group-D 18-08-2022 (Shift-I)

Zinc is more reactive than copper as per reactivity series.

---

407. **From the equation of ideal gas 4 grams of an ideal gas attains a volume of magnitude of 5.6m3 at 54.6K and 2 atomospheric pressures. What will be its molecular weight?**

(a) 32 (b) 16

(c) 64 (d) 4

Answer - (b)

RRB Group-D 12-12-2018 (Shift-III)

Using ideal gas equation, molecular weight comes out to be 16.

---

408. **Which of the following is ideal gas equation?**

(a) P/VT = μ R

(b) T/PV = μ R

(c) PV/T = μ R

(d) PV/T = (1/μ) R

Answer - (c)

ALP Stage -II 22.01.2019 (shift - II)

Ideal gas equation is PV/T = μR

---

409. **Which of the following is not a property of ionic compounds?**

i. Ionic compounds have low melting and boiling points.

ii. Ionic compounds are generally soluble in water and insoluble in solvent such as kerosene, petrol etc.

iii. Ionic compounds are solids are somewhat hard because of the strong force of attraction between the positive and negative ions.

iv. Ionic compounds conduct electricity in the molten state.

(a) ii (b) iii

(c) i (d) iv

Answer - (c)

RRB Group-D– 18/09/2022 (Shift-III)

Ionic compounds have high melting and boiling points.

---

410. **Which of the following awards is given for significant contribution in the field of atomic energy?**

(a) Homi Bhabha Award

(b) Borlaug Award

(c) Dr. B.C. Roy Award

(d) Shanti Swarup Bhatnagar Award

Answer - (a)

RRB Group-D– 13/09/2022 (Shift-I)

Homi Bhabha award is given for contribution in atomic energy field.

---

411. **For which of the following fields did Madam Curie win the Nobel Prize?**

(a) Physics and Chemistry

(b) Physics and Astronomy

(c) Physics and Meteorology

(d) Chemistry and Biology

Answer - (a)

RRB NTPC 22.02.2021 (Shift-I) Stage Ist

Marie Curie won Nobel Prize in Physics and Chemistry.

---

412. **Which of the following is a fissionable fuel in a nuclear reactor?**

(a) U238 (b) U235

(c) Pu239 (d) Pu115

Answer - (b)

RRB NTPC 17.02.2021 (Shift-II) Stage Ist

Uranium-235 is used as it is fissile.

---

413. **Which of the following is used in the treatment of cancer?**

(a) An isotope of cobalt

(b) An isotope of iodine

(c) An isotope of uranium

(d) An isotope of copper

Answer - (a)

(a) Al (b) Ag

(c) Au (d) Ca

Answer - (a)

RRB Group-D 25-09-2018 (Shift-III)

Aluminium has 3 valence electrons.

---

478. **The atomic number of magnesium is 12. What will be its valency?**

(a) ±2 (b) –3

(c) ±3 (d) –2

Answer - (a)

RRB Group-D 19-09-2018 (Shift-III)

Electronic configuration of Mg is 2,8,2. Its valency is +2.

---

479. **In Ammonia the valency of nitrogen is-**

(a) 1 (b) 3

(c) 4 (d) 2

Answer - (b)

RRB Group-D 19-09-2018 (Shift-III)

Valency of N in NH3 is 3.

---

480. **Which of the following compounds is not a covalent molecule.**

(a) H2O (b) NH3

(c) CH4 (d) MgCl2

Answer - (d)

RRB Group-D 17-09-2018 (Shift-I)

MgCl2 forms ionic bonds, not covalent.

---

481. **The Valence of chlorine relative to oxygen is .....?**

(a) 4 (b) 5

(c) 2 (d) 7

Answer - (d)

RRB Group-D 17-09-2018 (Shift-III)

Valency of Cl relative to O is 7 as Cl belongs to group 17.

---

482. **The element X is a tetravalant and the element Y is a bivalent . The compound formed by these two elements will be ————————.**

(a) XY (b) XY4

(c) XY2 (d) X2Y

Answer - (c)

RRB Group-D 12-11-2018 (Shift-I)

If X is tetravalent and Y is bivalent, compound will be XY2.

---

524. **Which of the following agents is good for purification (drinking) of drinking water?**

(a) Catalytic agent

(b) Reducing agent

(c) Sterilizing agent

(d) Oxidizing agent

Answer - (d)

RRB NTPC

Oxidizing agent used for purification of water.

---

525. **The oxidation reaction that produces heat and light is**

(a) endothermic

(b) combustion

(c) exothermic

(d) indifferent

Answer - (b)

RRB Group-D 28-09-2018 (Shift-III)

Combustion reaction produces heat and light.

---

526. **Which of the following statements is true?**

(a) During the reduction reaction, there is loss of protons in the atom.

(b) During the reduction reaction, protons are released into the atom.

(c) The loss of electrons in the atom during the reduction reaction.

(d) During the reduction reaction, electrons are added into the atom.

Answer - (d)

RRB Group-D 12-10-2018 (Shift-II)

Electrons are added during reduction reaction.

Answer: (c)

RRB ALP & Tec. (31-08-18 Shift-I)

The taste of the acids is sour. Their Ph value is less than 7.0, acids turn blue litmus paper in red. The reaction of acid and base it produce salts and water. All mineral acids such as hydrochloric acid (HCl), sulphuric acid (H_2SO_4) and nitric acid (HNO_3) are strong acids.

---

578. Acids that contain other non-metallic elements, in addition to oxygen, along with hydrogen, are called:

(a) strong acid (b) weak acid

(c) Hydra /oxy (d) dilute acid

Answer: (c)

RRB Science Planner Chemistry

(ii) Hydra acids- A hydroacid is a compound. Which hydrogen that is not bound to oxygen.

Examples- HCl, HBr, HCN~

---

579. What will we see if we take a small amount of liquefied soda and add about 1mL dilute hydrochloric acid to it?

(a) Only the neutralization reaction occurs, no gas is released.

(b) White colored sediment is formed

(c) CO gas emits with strong bubbling

(d) H_2 gas emits with the sound of pop.

Answer: (c)

RRB ALP & Tec. (17-08-18 Shift-II)

$2HCl + Na_2CO_3 \rightarrow 2NaCl + CO_2 + H_2O$

(liquid)

When we take a small amount of liquefied soda and add dillute hydrochloric acid to it, the CO2 gas comes out with strong bubble.

---

580. To dilute a concentrated acid, what should we do?

(a) water in dilute acid

(b) water in concentrated acid

(c) First water in acid and then acid in water

(d) concentrated acid in water

Answer: (d)

RRB ALP & Tec. (13-08-18 Shift-II)

To dilute a concentrated acid, we should add concentrated acid slowly to the water. To dilute any concentrated acid, a few drops of concentrated acid are added to the water. This is an exothermic reaction.

---

581. Which of the following substances is not secreted in the stomach as an ingredient of gastric acid?

(a) potassium chloride

(b) sulphuric acid

(c) hydrochloric acid

(d) sodium chloride

Answer: (b)

RRB NTPC 18.01.2017 (Shift-III) Stage II

Sulphuric acid is an intense inorganic acid, it is a dark, colorless substance, soluble with water, its chemical formula is H2SO4. It is not secroted in the stomach as an ingredient of gastric acid.

---

582. ..... can dissolve gold.

(a) Glycerin

(b) Petroleum ether

(c) methanol

(d) aquaregia

Answer: (d)

RRB Science Planner Chemistry

Aquarezia can dissolve gold. A mixture of one part of nitric acid (HNO_3) and three parts of hydrochloric acid (HCl) is known as aquaregia, it is also tarnishes Nobel metals gold, platinum etc.

---

583. Which of the following acids gives less H^+ ion when dissolved in water?

(a) HNO_3

(b) CH_3COOH

(c) H_2SO_4

(d) HCl

Answer: (b)

RRB Group-D 10-10-2018 (Shift-I)

Strong acids are those acids that, when added with the water, are completely converted into H^+ and anions. Such as HCl, H_2SO_4, HNO_3 etc. These acids dissolve in water and give more H^+. Weak acids are those acids that do not completely convert into H^+ and anions like CH_3COOH etc. when added to water. These acids give small amounts of H^+ when dissolved in water. Hence option (b) is acetic acid.

---

584. Which is correct on acidic basis?

(a) Red litmus turns blue

(b) Introduces OH^- in aqueous medium/in melting condition

Answer: (d)

RRB ALP & Tec. (17-08-18 Shift-I)

See the explanation of above question.

---

632. The most acidic mixture has a the pH value of .....?

(a) 14

(b) 7

(c) 1

(d) 0

Answer: (d)

RRB Group-D 11-10-2018 (Shift-III)

The pH of a highly acidic mixture is '0'. The pH scale measures the acidity or basicity of solutions. The lower the pH, the more acidic the solution. A pH of 0 is the strongest acid.

---

633. The pH values of the three solutions X, Y, and Z are 2, 11 and 7, respectively. Arrange them in descending order of hydrogen ion concentration.

(a) Z, Y, X

(b) X, Z, Y

(c) Y, Z, X

(d) X, Y, Z

Answer: (b)

RRB Group-D 18-09-2018 (Shift-III)

pH is a negative log of hydrogen ion concentration. A lower pH means a higher hydrogen ion concentration. So in descending order it is X<Z<Y.

---

634. What is the pH value of a solution whose hydrogen ions concentration is 1 × 10-5 moles per liter -

(a) 6

(b) 5

(c) 4

(d) 7

Answer: (b)

RRB ALP & Tec. (13-08-18 Shift-III)

Given: [H+] = 1 × 10−5
pH = −log [H+]
= −log (1 × 10−5)
= 5

---

635. Which of the following solutions will have the lowest pH value?

(a) Lemon juice

(b) Pure water

(c) blood

(d) detergent

Answer: (a)

RRB Group-D 22-10-2018 (Shift-III)

The pH value is a measure of the acidity or basicity of a solution. Substances that have a pH value less than 7 are acidic, and those with a pH value greater than 7 are alkaline. The pH value (2.2) of lemon juice is minimum.

---

636. Which of the following solutions is the most acidic of all?

(a) solution with pH scale 0

(b) solution with pH scale 1

(c) solution with pH scale 6

(d) solution with pH scale 7

Answer: (a)

RRB ALP & Tec. (21-08-18 Shift-I)

In the given option the solution with pH value zero is the most acidic to all of the given option. The pH scale measures the power of acidity or basicity of solutions on a scale of 0-14 where 0 is the strongest acid.

---

637. The pH value of neutral solution is:

(a) 9

(b) 7

(c) 4

(d) 5

Answer: (b)

RRB Group-D 25-09-2018 (Shift-II)

The pH value is between 0–14. Acidic solutions have a pH value of less than 7, while alkaline solutions have a pH value greater than 7 and neutral (inert) solutions have a pH value of 7.

---

638. Which of the following solutions is alkaline?

(a) $[H^+] < 1 \times 10^{-7}$ Mol/l

(b) $[H^+] = 1 \times 10^{-4}$ Mol/l

(c) $[H^+] > 1 \times 10^{-7}$ Mol/l

(d) $[H^+] = 1 \times 10^{-7}$ Mol/l

Answer: (a)

(a) Non-metallic character

(b) decreasing atomic mass

(c) metallic character

(d) increasing atomic masses

Answer: (d)

RRB Group-D 28-09-2022 (Shift-II)

Newland arranged the elements in increasing order of their atomic masses.

---

706. According to the Newland's law of octaves, how many element are present in between Potassium and Copper?

(a) 9

(b) 5

(c) 8

(d) 7

Answer: (d)

RRB Group-D 28-09-2022 (Shift-II)

As per Newland's law of Octaves, the properties of every 7th element after an element are similar to that of the 1st element.

---

707. Which two elements were put in the same slot by Newland?

(a) Na and Al

(b) Ca and Cu

(c) As and Se

(d) Co and Ni

Answer: (d)

RRB Group-D 28-09-2022 (Shift-III)

Newland positioned cobalt and nickel in the same column as they possess similar properties.

---

708. Consider the below statements and identify the correct answer.

Statement I: Law of Octaves was applicable only up to calcium.

Statement II: After calcium, every eighth element did not posses properties similar to that of the first.

(a) Both statements are correct. Statement II is correct explanation of Statement I.

(b) Only Statement I is correct.

(c) Only Statement II is correct.

(d) Both statements are correct. Statement I is correct explanation of Statement II.

Answer: (a)

RRB Group-D 23-08-2022 (Shift-II)

Both statements are correct and statement II explains statement I.

---

709. Select the incorrect statement from among the following.

(i) Newland arranged the elements in the order of increasing atomic masses and gave the law of Octaves.

(ii) Sodium is the eighth element after lithium.

(iii) Calcium is the eighth element after Beryllium

(iv) The law of Octaves was applicable only up to Magnesium, as after Magnesium every eighth element did not possess properties similar to that of the first.

(a) i

(b) ii

(c) iv

(d) iii

Answer: (c)

RRB Group-D 24-08-2022 (Shift-II)

Statement (iv) is incorrect as law of Octaves was applicable only up to Calcium.

---

710. What happens when concentrated hydrochloric acid is added to manganese dioxide?

(a) Hydrochloric acid is reduced while MnO_2 is oxidised.

(b) Hydrochloric acid is reduced to chlorine gas

(c) Manganese dioxide is reduced to manganese (II) chloride

(d) Hydrochloric gas is liberated

Answer: (c)

RRB Group-D 19-09-2022 (Shift-II)

$MnO_2 + 4HCl \rightarrow MnCl_2 + Cl_2 + 2H_2O$
Manganese dioxide is reduced to manganese(II) chloride.

711. Which element among the following was first to find that every eight element had properties similar to the element?

(a) John Newland

(b) Dmitri Mendeleev

(c) Johann Dobereiner

(d) Henry Moseley

Answer - (a)

RRB Group-D 19-09-2022 (Shift-II)

(John Newland was first to find that every eighth element had properties similar to that of the first element)

---

763. Mendeleev's periodic table examined the relationship between the atomic mass of elements and their _____.

(a) colour

(b) physical and chemical properties both

(c) physical properties only

(d) chemical properties only

Answer - (b)

RRB Group-D– 01/09/2022 (Shift-III)

(Mendeleev examined the relationship between the atomic masses of the elements and their physical and chemical properties)

---

764. Which of the following are produced in a neutralization reaction?

(a) Salt and water

(b) Acid and water

(c) Salt and acid

(d) Precipitate and base

Answer - (a)

RRB Group-D– 20/09/2022 (Shift-II)

(In a neutralisation reaction acid and base react with each other and make water and salt)

---

765. According to Mendeleev's periodic table, just like halogens, hydrogen also exists as a:

(a) triatomic molecule

(b) diatomic molecule

(c) monoatomic molecule

(d) tetra-atomic molecule

Answer - (b)

RRB Group-D– 22/09/2022 (Shift-III)

(According to Mendeleev's periodic table, just like halogens, hydrogen also exists as a diatomic molecule)

---

766. $2NaOH(aq) + H_2SO_4(aq) \rightarrow Na_2SO_4(aq) + 2H_2O(l)$

The given reaction is an example of:

(a) decomposition reaction

(b) precipitation reaction

(c) redox reaction

(d) neutralisation reaction

Answer - (d)

RRB Group-D– 22/09/2022 (Shift-II)

(When a base and an acid react with each other and make water and salt is known as neutralisation reaction)

---

767. Washing soda is:

(a) a base

(b) an acidic salt

(c) a neutral salt

(d) a basic salt

Answer - (d)

RRB Group-D– 16/09/2022 (Shift-III)

(Washing soda is a basic salt. Washing soda "Softens" the water by binding to the minerals in the water, allowing the detergents to lift dirt from fabric. Its chemical formula is $Na_2CO_3.10H_2O$)

---

768. What is the main limitation of Mendeleev's Periodic Table?

(a) No fixed position can be given to hydrogen in the Periodic Table.

(b) Mendeleev's Periodic Table contains vertical columns called groups and horizontal rows called periods.

(c) Nobel gases could be placed in a new group without disturbing the existing order.

(d) Mendeleev selected hydrogen and oxygen as they are very reactive and formed compounds with most elements.

Answer - (a)

RRB Group-D– 16/09/2022 (Shift-III)

(The main limitation of Mendeleev's periodic table is that no fixed position can be given to hydrogen in the periodic table)

---

769. What is the product of the following combination reaction?

$SO_3 + H_2O \rightarrow$?

(a) H_2SO_4

(b) H_2O

(c) SO_2

(d) H_2S

Answer - (a)

RRB Group-D– 05/09/2022 (Shift-I)

(Sulphur trioxide (SO_3) reacts with water (H_2O) and forms sulphuric acid (H_2SO_4))

(c) Solution is basic with low pH value.

(d) Solution is acidic with low pH value.

Answer - (a)

RRB Group-D– 18/09/2022 (Shift-I)

(High [OH-] leads to high pH and basic solution)

---

823. There is an aqueous solution X, whose pH is 2.6. It represents that the solution is :

(a) strongly basic in nature

(b) neutral in nature

(c) strongly acidic in nature

(d) weakly basic in nature

Answer - (c)

RRB Group-D– 08/09/2022 (Shift-I)

(pH 2.6 shows solution is strongly acidic)

---

824. You have two solutions A and B. The pH of solution A is 6 and that of solution B is 9. Based on this information, select the correct answer.

(a) Both the solutions are basic

(b) Solution A is acidic, and Solution B is basic

(c) Both the solutions are acidic

(d) Solution A is basic, and Solution B is acidic

Answer - (b)

RRB Group-D– 08/09/2022 (Shift-II)

(A is acidic and B is basic as per pH range)

---

825. Consider the statements given below and identify the correct answer.

Statement-I: Modern periodic table has 18 vertical columns known as 'periods' and 7 horizontal rows known as 'groups'.

Statement-II: Groups in the Periodic Table signify an identical outer shell electronic configuration.

(a) Both statements are correct

(b) Both statements are incorrect

(c) Statement I is correct, Statement II is incorrect

(d) Statement II is correct, Statement I is incorrect

Answer - (a)

RRB Group-D 23-08-2022 (Shift-I)

(Both statements are correct regarding modern periodic table)

---

826. Whenever moving from left to right in a period, metallic character _____.

(a) remains constant

(b) decreases

(c) increase

(d) first increase, then decreases

Answer - (b)

RRB Group-D– 09/09/2022 (Shift-I)

(Metallic character decreases on moving left to right)

---

827. In Dobereiner's Triads, elements were written as:

(a) Moving from left to right with increasing atomic masses

(b) down the group with decreasing atomic masses.

(c) down the group with increasing atomic masses.

(d) Moving from left to right with decreasing atomic masses

Answer - (c)

RRB Group-D 28-09-2022 (Shift-III)

(Elements were written down the group with increasing atomic masses in Dobereiner's triads)

---

828. Which of the following solutions has the lowest pH value?

(a) Saliva (after a meal)

(b) Saliva (before a meal)

(c) Tomato juice

(d) Coffee

Answer - (d)

RRB Group-D– 26/09/2022 (Shift-II)

(Coffee has lowest pH value among given options)

---

829. Which of the following statements is/are correct?

A. pH value of saliva: 6.2 – 8

B. pH value of pure blood: 7.35 – 7.45

C. pH value of pure water: 9

(a) Only B

(b) B and C

(b) hydrogen

(c) neon

(d) helium

Answer: (b)

RRB Group-D 03-12-2018 (Shift-II)

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939. **The atomic number of an element is 17. What is its place in the modern periodic table?**

(a) Period 17 group 3

(b) Period 3 group 17

(c) Period 2 group 7

(d) Period 7 group 17

Answer: (b)

RRB Group-D 15-11-2018 (Shift-I)

---

940. **Lanthanides and Actinides are also called **.....**

(a) internal transition element

(b) inert gas

(c) Common elements

(d) Transition elements

Answer: (a)

RRB JE 24.05.2019 (Shift-IV)

---

941. **Elements like Li, Na and K. . . . . are related to**

(a) alkaline soil group

(b) halogen group

(c) Zero group

(d) Alkali metal group

Answer: (d)

RRB Group-D 12-11-2018 (Shift-III)

---

942. **What are the elements with lanthanum in group 3, period 6 called?**

(a) actinoid

(b) lanthanoid

(c) halogen

(d) transition element

Answer: (b)

RRB Group-D 06-12-2018 (Shift-II)

---

943. **The first and second group of modern periodic table are called?**

(a) b– block

(b) s– block

(c) f– block

(d) p– block

Answer: (b)

RRB Group-D 05-11-2018 (Shift-I)

---

944. **Seventh period:**

(a) is incomplete with 30 elements.

(b) is incomplete with 32 elements.

(c) is complete with 32 elements.

(d) is incomplete with 23 elements.

Answer: (b)

RRB Group-D 16-11-2018 (Shift-I)

---

945. **The elements of an F-block are called:**

(a) Alkaline soil metals

(b) Transitive elements

(c) Internal transition elements

(d) alkaline metals

Answer: (c)

RRB Group-D 01-11-2018 (Shift-II)

---

946. **Which group of modern periodic table contains complete valence shells and chemically inert elements?**

(a) 15

(b) 16

(c) 17

(d) 18

Answer: (d)

RRB Group-D 12-11-2018 (Shift-I)

---

947. **. . . . . Is not an actinoid?**

(a) thorium

(b) Nickel

(c) hydrogen

(d) phosphorus

Answer - (d)

RRB NTPC 03.04.2016 (Shift-III) Stage I

Hanning Brand discovered phosphorus in 1669.

1114. **Phosphorus is kept in water so that .....

(a) Avoid spoilage.

(b) Avoid catching fire.

(c) Ensure durability.

(d) Stay out of reach of children.

Answer - (b)

RRB NTPC Stage I 22.04.2016 (Shift-I)

Phosphorus catches fire in air, so it is kept immersed in water.

1115. **Matchsticks are made up of .....

(a) Sulphur

(b) Phosphorus

(c) magnesium

(d) potassium

Answer - (b)

RRB NTPC 30.03.2016 (Shift-I) Stage I

Matchsticks contain red phosphorus and phosphorus sulphide.

1116. **Atomicity of phosphorus is -**

(a) 3

(b) 4

(c) 5

(d) 7

Answer - (b)

RRB Group-D 26-10-2018 (Shift-II)

Phosphorus exists as P4 molecule, so its atomicity is 4.

1117. **What is the atomicity of phosphorus?**

(a) Diatomic

(b) Polyatomic

(c) Monoatomic

(d) Tetra-atomic

Answer - (d)

RRB Group-D 24-10-2018 (Shift-I)

Phosphorus exists as P4, so its atomicity is tetra-atomic.

1118. **White phosphorus is stored in ————.**

(a) oxygen

(b) hydrogen

(c) water

(d) alcohol

Answer - (c)

(c) Zn

(d) Al

Answer - (a)

RRB Group-D 05-10-2018 (Shift-III)

Sodium reacts vigorously with cold water.

1289. **The sodium metal is kept inside the ..... to prevent exposure to oxygen.**

(a) water

(b) oil

(c) kerosene

(d) liquid hydrogen

Answer - (c)

RRB NTPC 04.04.2016 (Shift-III) Stage I

Sodium is stored in kerosene oil to prevent reaction with air.

1290. **Washing soda can be used .....

(a) For disinfection of drinking water

(b) to cook

(c) To soften hard water

(d) As a non-toxic ingredient as a home care product

Answer - (c)

RRB Group-D 22-08-2022 (Shift-II)

Washing soda removes hardness of water.

1291. **Which of the following groups has one electron in the outermost shell?**

(a) H , Li and Be

(b) Li, Na and Mg

(c) Li, Na and K

(d) Li, Na and Ca

Answer - (c)

RRB Group-D 15-11-2018 (Shift-II)

Li, Na and K have one electron in outermost shell.

1292. **The chemical name of caustic soda is .. . .**

(a) sodium thiosulphate

(b) sodium carbonate

(c) sodium chloride

(d) sodium hydroxide

Answer - (d)

RRB Group-D 29-10-2018 (Shift-III)

Chemical name of caustic soda is sodium hydroxide.

1293. **What is baking soda?**

(a) Potassium permanganate

(b) Sodium chloride

(c) sodium hydrogen carbonate

(d) sodium carbonate

Answer - (c)

RRB NTPC 29.03.2016 (Shift-II) Stage I

1315. **The element with atomic number....will form alkaline oxide.**

(a) 17

(b) 14

(c) 11

(d) 7

Answer - (c)

RRB Group-D 22-10-2018 (Shift-III)

Sodium with atomic number 11 forms alkaline Na2O oxide.

1316. **Which of the following metals reacts vigorously with cold water?**

(a) iron

(b) sodium

(c) zinc

(d) aluminium

Answer - (b)

RRB Group-D 24-09-2018 (Shift-III)

Sodium reacts vigorously with cold water.

1317. **Aashi by mistake used an unknown solution to clean he clothes, in place of detergent. Her clothes faded. The solution could be:**

(a) common salt

(b) bleaching power

(c) talcum power

(d) baking soda powder

Answer - (b)

RRB Group-D– 01/09/2022 (Shift-III)

Bleaching powder can fade clothes due to its bleaching action.
