

ہر سوال کے سامنے چار دائرے دیئے گئے ہیں، صرف صحیح جواب والا دائرہ بھر دیں۔

دائروں کو شیڈ (بھرنے) کے لیے نیلے یا کالے رنگ کا مارکر استعمال کریں۔

جواب میں ایک سے زائد دائرے بھرنے سے جواب غلط تصور ہو گا۔

Time: 20 Minutes

SECTION-A

Marks

Q1: Choose the correct option i.e, A,B,C or D?

1. The branch which focuses on qualitative and quantitative analysis of substances is:

- ☐ Organic chemistry ☒ Analytical chemistry
☐ Inorganic chemistry ☐ Environmental chemistry

2. Molecular formula is 2 related to empirical formula as given:

- ☐ $EF = MF \times n$ ☐ $EF = MF \div n$
☒ $MF = n \times EF$ ☐ $MF = EF \div n$

3. Carbon-12, Carbon-13, and Carbon-14 are isotopes because they have the same:

- ☐ Mass number ☐ Number of neutrons
☒ Chemical properties ☐ Atomic mass

4. The element which has the 4 lowest electro-negativity value among the given is:

- ☒ Cesium ☐ Sodium ☐ Lithium ☐ Potassium

5. The duplet rule explains the stability of:

- ☐ Alkali metals ☐ Transition metals
☒ Noble gases like helium ☐ Halogens

6. Bonds in ionic compounds are:

- ☐ Directional ☒ Non-directional ☐ Covalent ☐ Metallic

7. Increase in temperature of a liquid causes vapour pressure to:

- ☐ Decrease ☐ Remain constant ☒ Increase ☐ Become zero

8. The molarity of a solution prepared by dissolving 7.5 moles of CaCO_3 in 1.5 dm^3 of solution is:

- ☐ 2.5 M ☒ 5.0 M ☐ 7.5 M ☐ 888.5 M

9. The mixture in which particles settle down if left undisturbed or allowed to stand is:

- ☐ Solution ☐ Colloid ☒ Suspension ☐ Emulsion

10. The oxidation number of carbon in CO_2 is

- ☐ -2 ☐ 0 ☐ +2 ☒ +4

11. In an electrolytic cell, the cathode is usually connected to the:

- ☐ Positive terminal of the battery ☐ Neutral terminal
☒ Negative terminal of the battery ☐ Earth wire

12. Alkaline earth metals require more energy to lose an electron because they have:

- ☒ Higher nuclear charge ☐ More shielding effect
☐ Larger atomic size ☐ Fewer protons

Chemistry (NEW) 9th (Fresh/Reappear)

Note: Time allowed for Section-B & Section-C is 2:40 hours.

SECTION-B

Marks: 32

Q2: Attempt any NINE parts. Each part carries FOUR marks.

Q1: Explain why is water a compound and air a mixture.

Q2: Write the electronic configuration of the following elements:

Q3: How does the shielding effect remain almost constant across a period but varies in group? Give valid reasons.

Q4: Describe the covalent bond in methane (CH_4) and carbon dioxide (CO_2) by stating the type of bond in each.

Q5: Why do metals lose electrons easily? Describe the formation of potassium ion (K^+).

Q6: Define Charles's law. Describe its experimental verification.

Q7: At a constant temperature, how do unsaturated and saturated solutions differ in their solute concentration?

Q8: Classify the given substances as polar or non-polar and predict their solubility in water: (a) Sugar (b) Petrol

Q9: Explain how does greasing and oiling protect iron tools from rusting?

Q10: How is chromium electroplated on steel? Also write half reactions occurring at electrodes.

Q11: Highlight the commercial applications of platinum. Write four points.

SECTION-C

Marks: 21

Note: Attempt any THREE questions. All questions carry equal marks.

Q12: (a) Distinguish Rutherford's model from Dalton's atomic theory by giving two points of each. 4

(b) Calculate the number of molecules present in 4 moles of oxygen gas (O_2). 3

Q13: (a) Differentiate between double and triple covalent bond with an example of each. 4

(b) What is electronic configuration? Justify why do sodium (Na) and potassium (K) belong to the same group. 3

Q14: (a) What is solid in liquid solution? How is it formed? Give one daily life example. 4

(b) Classify the following as amorphous or crystalline solids: 3

(i) Rubber (ii) Butter (iii) Glass

- Q15: (a) Draw a neat diagram of a Daniel cell and also label any two main parts. Show clearly the direction of electron flow from anode to cathode. 4
- (b) Write the balanced chemical equation when bromine reacts with solution of hydrogen sulfide. Name the type of chemical reaction of the product(s) formed. 3

