

Class 10 Chemistry Chapter 5 Periodic Classification of Elements MCQs

1. The Dobereiner triad is not which of the following?

- a) Li, Na, and K
- b) He, Na and Ar
- c) Ca, Sr and Ba
- d) CL, Br and I

Answer: b

Explanation: According to Dobereiner, the average weight of the first and third elements in triads is equal to the second. The foregoing conditions are met by Li, Na, and K; Ca, Sr, and Ba; CL, Br, and I. He, Na, and Ar, on the other hand, do not adhere to the Dobereiner Triads' law.

2. The attributes of corresponding elements are the periodic functions of the _____

- a) Atomic Weights
- b) Atomic Number
- c) Chemical properties
- d) No of protons

Answer: a

Explanation: The periodic functions of the atomic weights are the qualities of corresponding elements, according to Russian chemist Dmitri Mendeleev, who is credited with developing the present periodic table.

3. An element's physical and chemical properties are a periodic function of its mass

- a) Atomic mass

- b) Element behaviour
- c) No of electrons
- d) Atomic number

Answer: d

Explanation: These tests, according to Henry Moseley, change the preceding assertion that the periodic function of the atomic number states the physical and chemical properties of that element is the current periodic law.

4. Mendeleev's periodic table's horizontal rows were called _____

- a) periods
- b) groups
- c) series
- d) rows

Answer: c

Explanation: Dmitri Mendeleev, a Russian chemist, categorised elements in ascending order of their atomic weights based on chemical and physical properties. There were eight groupings (vertical columns) and twelve series (horizontal rows).

5. The greatest number in the period correlates to the highest number in the period.

- a) Azimuthal quantum number
- b) Spin quantum number
- c) Magnetic quantum number
- d) Principal quantum number

Answer: d

Explanation: The horizontal rows that indicate period number represent the highest main quantum number of the atoms in the period, as seen in the most convenient and extensively used long-form periodic table, the modern version.

6. Which of the following elements belongs to the periodic table's second transition series?

- a) Ni
- b) Au
- c) La
- d) Nb

Answer: d

Explanation: The second transition series, often known as the 4d series, is made up of the 10 elements of the 5th period: Y (atomic number 39), Zr, Nb, Mo, Tc, Ru, Rh, Pd, Ag, and Cd (atomic number 48).

7. What are the transition elements' characteristics?

- a) Metallic
- b) Non-metallic
- c) Metalloid
- d) Varies from element to element

Answer: a

Explanation: The transition elements are often referred to as transition metals because they are all metals. They have typical metallic properties as a group and are less reactive than metals in groups 1 and 2 of the periodic table.

8. What may a litmus paper be used to test?

- a) Acidic nature only
- b) Basic nature only
- c) Both acidic nature and basic nature
- d) Nothing

Answer: c

Explanation: A dye derived from lichens is used to make litmus paper. It was once used to determine the acidic and basic properties of a product. The colour red denotes acidic nature, while the colour blue denotes basic nature. The colour of neutral litmus paper is purple.

9. What is the first element in the periodic table's fourth transition series?

- a) Scandium
- b) Yttrium
- c) Actinium
- d) Lanthanum

Answer: c

Explanation: Actinium (atomic number = 89) is the first element of the fourth transition series, or 6d series, which corresponds to the filling of the 6d sublevel. It is followed by elements with atomic numbers 104 and higher. These elements belong to the periodic table's seventh era.

10. The ions O^{2-} , F^{-} , Na^{+} , and Mg^{2+} are referred to as _____

- a) Isoelectronic species
- b) Isoneutral species
- c) Isotopes
- d) Isobars

Answer: a

Explanation: Isoelectronic species include O^{2-} , F^{-} , Na^{+} , and Mg^{2+} since they all contain the same number of electrons. Isotopes have the same amount of protons but differ in the number of neutrons they have. The mass number of isobars is the same, but the atomic number is different.