

Science Quiz Aug 2021

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1. The number of protons in the nucleus of an atom is called its-----
(A) atomic number (B) mass number (C) isotopes (D) electrons
2. An atom of an element has 11 protons 11 electrons and 12 neutrons. The atomic mass of the atom is-----
(A) 35 (B) 23 (C) 12 (D) 22
3. The maximum number of electrons that can go into the M-shell is
(A) 8 (B) 32 (C) 2 (D) 18
4. The number of electrons in the atom of an element X is 15 and the number of neutrons is 16. Which of the following is the correct representation of an atom of this element?
(A) $^{31}\text{X}_{15}$ (B) $^{31}\text{X}_{16}$ (C) $^{16}\text{X}_{15}$ (D) $^{15}\text{X}_{16}$
5. The ions of an element have 3 positive charges. The mass number of an atom of this element is 27 and the number of neutrons is 14. What is the number of electrons in the ion?
(A) 13 (B) 10 (C) 14 (D) 16
6. The sub-atomic particles not present in a hydrogen atom is ----
(A) electron (B) neutron (C) proton (D) nucleus
7. Goldstein's experiment which involve passing high voltage electricity through gases at very low pressure resulted in the discovery of -----
(A) electron (B) proton (C) neutron (D) nucleus

8. Isotopes have different mass number because their nuclei contain different number of -----
(A) protons (B) electrons (C) neutrons (D) none of these
9. Cathode rays are a beam of fast moving -----
(A) electrons (B) protons (C) neutrons (D) none of these
10. The first model of an atom was given by-----
(A) Neil Bohr (B) Ernest Rutherford
(C) J.J Thomson (D) Goldstein
11. The atom of an element X has 7 electrons in its M -shell. What could element X be?
(A) fluorine (B) chlorine (C) nitrogen (D) sulphur
12. The electronic configuration of an element is Z is 2, 8, 8. What type of ion will be formed by an atom of element Z?
(A) cation (B) anion (C) element Z will not form any ion
13. Which of the following elements does not exhibit electro valency?
(A) calcium (B) chromium (C) carbon (D) cadmium
14. The number of valence electrons in a sulphide ion, S^{-2} . Is----
(A) 16 (B) 10 (C) 9 (D) 8
15. Three different atoms of oxygen are represented as: $^{16}O_8$, $^{17}O_8$, $^{18}O_8$. Give the nuclear combination of $^{18}O_8$
(A) protons 8, neutrons 10 (B) protons 8, electrons 10
(C) protons 10, neutrons 8 (D) protons 10, electrons 8

16. The atomic number of an element X is 8 and that of element Y is 4. Both these elements can exhibit a valency of -----
(A) 1 (B) 2 (C) 3 (D) 4
17. Elements having valency '1' are -----
(A) always metals (B) always non -metals
(C) always metalloid (D) either metals or nonmetals
18. The radioactive isotopes used in the treatment of cancer is –
(A) plutonium- 239 (B) arsenic- 74
(C) Cobalt -60 (D) iodine -131
19. Magnesium has two valence electrons in the -----
(A) M -shell (B) K-shell (C) L-shell (D) N-shell
20. The valency of Nitrogen in N_2 molecule is -----
(A) 5 (B) 3 (C) 4 (D) 1
21. Which is radioactive isotope used as a fuel in the reactors of nuclear power plants.
(A) cobalt- 60 (B) iodine -131 (C) uranium-235 (D) arsenic -74
22. What is the reason for the different atomic masses of the isotopes of an element?
(A) due to the different number of neutrons of an element
(B) due to the different number of electrons of an element
(C) due to the different number of protons of an element
(D) none of these

23. What is the reason for the identical chemical properties of all the isotopes of an element?
- (A) contain the same number of electrons
 (B) have identical electronic configurations
 (C) same number of valence electrons
 (D) all of these
24. What is the relationship between the atoms containing 20 protons, 20 electrons and 20 neutrons, and another atom containing 18 protons, 18 electrons and 22 neutrons?
- (A) isotopes (B) isobars (C) radioactive isotopes (D) none of these
25. There are four elements P, Q, R and S having atomic numbers of 4, 18, 10 and 16 respectively. Which elements can exhibit covalency as well as electro valency?
- (A) P (B) Q (C) R (D) S

Answers

1. (A) 2. (B) 3. (D) 4. (A) 5. (B) 6. (B) 7. (B) 8. (C) 9. (A)
 10. (C) 11. (B) 12. (C) 13. (C) 14. (D) 15. (A) 16. (D) 17. (D) 18. (C)
 19. (A) 20. (B) 21. (C) 22. (A) 23. (D) 24. (B) 25. (D)