



<b>Name of the Bundle</b>	Proficient Bundle V1	<b>Subject</b>	Competitive Exams Training (Science & Geography)
<b>Topic</b>	Atomic Structure	<b>Last updated on</b>	22 August 2024

1.The difference in isotope of an element is \_\_\_\_\_.

- a) Mass number
- b) Atomic number
- c) Number of protons
- d) Number of neutrons

**Ans: a) Mass Number**

2.According to Dalton's atomic theory, an atom

- a) Can be further subdivide
- b) Cannot be subdivided
- c) Contains neutrons, protons and electrons
- d) None of these

**Ans: b) Cannot be subdivided**

3.Atoms of different elements with different atomic numbers, which have the same mass number are known as \_\_\_\_\_

- a) Isomers
- b) Isotones
- c) Isotopes
- d) Isobars

**Ans: d) Isobars**

4.Consider the species  $^{72}\text{Zn}$ ,  $^{75}\text{As}$  and  $^{74}\text{Ge}$ . These species have

- a) The same number of electrons.
- b) The same number of protons.
- c) The same number of neutrons.
- d) The same number of protons and neutrons

**Ans: c) The same number of neutrons**

5.Which model is not able to explain the stability of an atom?

- a) Bohr's Model
- b) Rutherford's Model
- c) Thomson's Model
- d) None of the above

**Ans: b) Rutherford's Model**



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6. Experimentation with cathode-ray led to the discovery of \_\_\_\_\_

- a) Electrons
- b) Protons
- c) Neutrons
- d) Nucleus

**Ans: a) Electrons**

7. Which of the following quantities can only be a whole number?

- a) Atomic radius
- b) Atomic number
- c) Mass number
- d) Equivalent weight

**Ans: b) Atomic number**

8. Which of the following defines the Mass number of an atom?

- a) Number of protons + number of electrons
- b) Number of neutrons + number of electrons
- c) Number of protons + number of neutrons
- d) Number of electrons

**Ans: c) Number of protons + number of neutrons**

9. Who is credited with the discovery of electrons ?

- a) JJ Thomson
- b) James Chadwick
- c) Ernest Rutherford
- d) Niels Bohr

**Ans: a) JJ Thomson**

10. An atom has a mass number of 37 and atomic number 17. How many protons does it have?

- a) 20
- b) 17
- c) 54
- d) 21

**Ans: b) 17**



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11. Which of the following mostly accounts for the mass of an atom?

- a) Neutrons
- b) Neutron and proton
- c) Electron and proton
- d) Electron and neutron

**Ans: b) Neutron and proton**

12. An element has an electronic configuration of 2, 8, 5. Its valency is

- a) 2
- b) 7
- c) 3
- d) 1

**Ans: c) 3**

13. During a chemical reaction, atomic number

- a) Changes
- b) Remains same
- c) Changes and then is restored
- d) Changes alternately

**Ans: b) Remains same**

14. Which isotope of hydrogen contains only one proton and no neutron in its nucleus?

- a) Protium
- b) Deuterium
- c) Tritium
- d) None of the above

**Ans: a) Protium**

15. Atoms with the same number of protons but different numbers of neutrons. These atoms are called

- a) Isomers
- b) Isotones
- c) Isotopes
- d) Isobars

**Ans: c) Isotopes**



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16. Which of the following is not a fundamental particle?

- a) Proton
- b) Neutron
- c) Alpha particles
- d) Electron

**Ans: c) Alpha particles**

17. The atomic theory of matter was first proposed by

- a) JJ Thomson
- b) James Chadwick
- c) Ernest Rutherford
- d) John Dalton

**Ans: d) John Dalton**

18. Nucleus consists of two sub-particles known as \_\_\_\_\_

- a) Nucleons
- b) Neutrons
- c) Nucleosides
- d) Nucleotides

**Ans: a) Nucleons**

19. Number of protons in the nucleus is called \_\_\_\_\_

- a) Atomic number
- b) Mass number
- c) Electric charge
- d) Periodic number

**Ans: a) Atomic number**

20. Electrons that orbit outermost shell of an atom are called \_\_\_\_\_

- a) Valence electrons
- b) Electrons
- c) Electron Coefficients
- d) Neutrons

**Ans: a) Valence electrons**



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21. Name an atom in which the nucleus of that atom does not contain any neutrons?

- a) Oxygen
- b) Hydrogen
- c) Phosphorous
- d) Sodium

**Ans: b) Hydrogen**

22. Who discovered neutrons?

- a) JJ Thomson
- b) James Chadwick
- c) Goldstein
- d) Rutherford

**Ans: b) James Chadwick**

23. A subatomic particle is revolving around the nucleus in orbits. It is negatively charged. It was discovered by JJ Thomson. The particle is \_\_\_\_\_

- a) Proton
- b) Neutron
- c) Electron
- d) Nucleus

**Ans: c) Electron**

24. The mass of the atoms is due to the mass of \_\_\_\_\_

- a) Protons
- b) Neutron
- c) Electron
- d) Nucleus

**Ans: d) Nucleus**

25. The atomic number and mass number of sodium are 11 and 23 respectively. The number of neutrons is \_\_\_\_\_

- a) 11
- b) 23
- c) 34
- d) 12

**Ans: d) 12**



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26. \_\_\_\_\_ is radioactive Hydrogen.

- a) Protium
- b) Deuterium
- c) Tritium
- d) None of these

**Ans: c) Tritium**

27. When an electron moves from a higher energy level to lower energy level, the energy will

- a) Increases
- b) Is absorbed
- c) Is given off
- d) There is no change

**Ans: c) Is given off**

28. Neutrons were discovered by Chadwick by bombarding a thin sheet of beryllium by \_\_\_\_\_

- a)  $\alpha$  particles
- b)  $\beta$  particles
- c)  $\gamma$  particles
- d)  $\delta$  particles

**Ans: c)  $\alpha$  particles**

29. The average diameter of an atom is \_\_\_\_\_

- a)  $10^{-10}$  m
- b)  $10^{-9}$  m
- c)  $10^{-5}$  m
- d)  $10^{-5}$  m

**Ans: a)  $10^{-10}$  m**

30. What is the value of 1 mole?

- a)  $7.623 \times 10^{23}$
- b)  $9.589 \times 10^{23}$
- c)  $8.000 \times 10^{23}$
- d)  $6.023 \times 10^{23}$

**Ans: d)  $6.023 \times 10^{23}$**



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31. An element has an electronic configuration of 2, 8, 7. Its valence electron is

- a) 8
- b) 2
- c) 7
- d) 1

**Ans: d) 1**

32. How many valence electrons does a carbon atom have?

- a) 2
- b) 4
- c) 6
- d) 1

**Ans: c) 6**

33. \_\_\_\_\_ is an electrically neutral and weakly interacting subatomic particle.

- a) Neutron
- b) Positron
- c) Electron
- d) proton

**Ans: a) Neutron**

34. Which is the most electronegative element?

- a) Chlorine
- b) Fluorine
- c) Bromine
- d) Iodine

**Ans: b) Fluorine**

35. Which among the following is true?

- a) Thomson's model – Plum pudding model
- b) Bohr's model – Nuclear theory
- c) Rutherford's model – Quantization of energy
- d) All of the above

**Ans: a) Thomson's model – Plum pudding model**



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36. If the number of protons and neutrons of an element is 13 and 14 respectively, then what's the atomic number(Z) and mass number(A)?

- a) 13, 17
- b) 13, 27
- c) 14,13
- d) 27,14

**Ans: b) 13, 27**

37. Which of the following is not an isotope of hydrogen?

- a) Protium
- b) Deuterium
- c) Tritium
- d) Helium

**Ans: d) Helium**

38. Find out the number of neutrons, protons, and electrons of  ${}_{17}\text{Cl}^{37}$  respectively.

- a) 20, 20, 17
- b) 17, 17, 17
- c) 20, 17, 17
- d) 17, 17, 17

**Ans: c) 20, 17, 17**

39. Pick out the isobar of  ${}_{18}\text{Ar}^{40}$ .

- a)  ${}_{12}\text{Mg}^{24}$
- b)  ${}_{26}\text{Fe}^{58}$
- c)  ${}_{19}\text{K}^{40}$
- d)  ${}_{28}\text{Ni}^{64}$

**Ans: c)  ${}_{19}\text{K}^{40}$**





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40. Thomson discovered that every substance in this universe is made up of \_\_\_\_\_ from his experiments.

- a) Neutrons
- b) Protons
- c) Electrons
- d) Mass

**Ans: c) Electrons**

41. \_\_\_\_\_ is the lightest and smallest particle that's obtained from hydrogen.

- a) Electron
- b) Proton
- c) Neutron
- d) Particle

**Ans: b) Proton**

42. Which of the following may not be explained by Dalton's atomic theory?

- a) Reason for combining atom
- b) Conservation of mass
- c) Chemical philosophy
- d) Indivisible atoms

**Ans: a) Reason for combining atoms**

43. The charge of an atom

- a) Positively charged
- b) Neutral
- c) Negatively charged
- d) None of the above

**Ans: b) Neutral**

44. What are isotones?

- a) Atoms have same number of protons but different number of neutrons
- b) Atoms have same number of neutrons but different number of protons
- c) Atoms have same number of protons and neutrons
- d) Atoms of the same element with different masses

**Ans: b) Atoms have same number of neutrons but different number of protons**



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45. According to Modern Atomic Theory, which of the following is wrong?

- a) Atom is the smallest particle that takes part in a reaction
- b) Atoms are indivisible
- c) Atoms of the same element may not be similar in all their properties
- d) Atoms of the different element may be similar in some of their properties

**Ans: b) Atoms are indivisible**

46. Which atomic model discovered the nucleus of an atom?

- a) Bohr atomic model
- b) Dalton atomic model
- c) Rutherford atomic model
- d) None of the above

**Ans: c) Rutherford atomic model**

47. When Alpha particles are passed through a thin metal foil, most of them go straight through the foil because of \_\_\_\_\_.

- a) The empty space present in atom
- b) The high speed
- c) Positive charge
- d) Negative charge

**Ans: a) The empty space present in atom**

48. Which of the following rays is neutral in nature?

- a) Cathode Rays
- b) Alpha Rays
- c) Beta Rays
- d) Gamma Rays

**Ans: d) Gamma Rays**

49. The species that take part in chemical reactions are

- a) Atoms
- b) Molecules
- c) Electrons
- d) Protons

**Ans: a) Atoms**



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50. Tri atomic molecules contain \_\_\_\_ number of atoms.

- a) Three
- b) Four
- c) Two
- d) Six

**Ans: a) Three**