



# CHEMISTRY

## BOOKS - V PUBLICATION

### Structure of Atom

#### Question Bank

1. Names of some scientists and their contributions are given shuffled in the

following table. Match them suitably.

Scientist	Contribution
John Dalton	Law of Electrolysis
Michael Faraday	Planetary Model of Atom
J.J. Thomson	Atomic theory
Rutherford	Discovered electron



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2. Atomic number of an atom  $Z=17$ , Mass number=35. a) Find the number of protons, electrons and neutrons in the atom. b) Write the electronic configuration of the atom. c) Draw the Bohr model of atom.



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3. The mass number of an atom is 31 . The M shell. of this atom contains 5 electron.

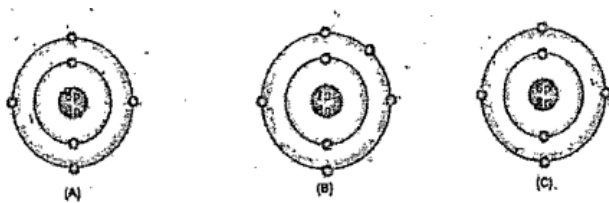
A)What is the atomic number of this atom?.B)How many neutrons does this atom have?.C)Write the electronic configuration.



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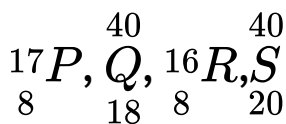
4. Bohr models of atoms A,B,C are given (Symbols are not real). a) Write the atomic

number, mass number and electronic configuration of the atoms. b) Among these, which are isotopes? Why? .



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5. Symbols (not real symbols) of some atoms are given



a) Find the atomic number and mass number

of these elements .

b) Which among these are isotopic pairs?

c) Draw the Bohr model of atom Q



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6. Prepare a table with the electronic configuration of elements of atomic number from 1 to 18



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7. Draw and exhibit the Bohr model of elements having atomic number 1 to 10



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8. The formula for finding the maximum number of electrons that can be accommodated in a shell is .....



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9. The method of arrangement of electrons in different shells in an atom is called:.....



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10. .... is formed by the reaction of deuterium with oxygen is used in nuclear reactors.



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**11.** The third shell (M) can accommodate a maximum of .....electrons.



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**12.** The mass number of an atom is 17 Atomic number is 8 What is the number of neutrons present in. it?



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**13.** Protium, deuterium and .....are the three isotopes of hydrogen



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**14.** .....are atoms of the same element having same atomic number and different mass number.



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**15.** Protons and ..... are found in the nucleus of an atom.



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**16.** The scientist who found isotopes.



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**17.** Find the relation and fill up suitably.

Charge of proton :positive

Charge of neutron:



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**18.** Which are not related to dalton's atom theory below.

a) Matter is made:up of very small particles called atoms.

b) Atoms of the same elements will identical in properties, size and mass. c) An atom has a centre cailed nucieus.

d) As long as an electron revolves in a particular orbit, its energy remains constant.



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19. Find the atomic number of the atom which is given below.  $(16)^{32}\text{A}$



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20. The representation of the Bohr atom model of an element is given below.

a) What is the number of electrons in the L shell of this element?

b) Write the mass number.

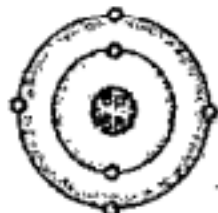


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**21.** Bohr models of atoms A, B,C,D are given (Symbols are not real).

a) Write the atomic number, mass number and electronic configuration of the atoms.

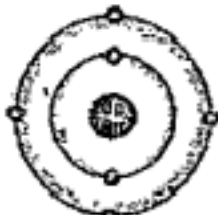
b) Among these, which are isotopes? Why?



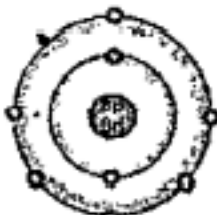
(A)



(B)



(C)



(D)



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22. a) What is the difference between atomic number and mass number.

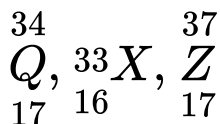
b) If the mass number of an element is 52 , and

atomic number is 24, then how many neutrons will be there in the nucleus of its atom?



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23. Notice the three atoms given below:



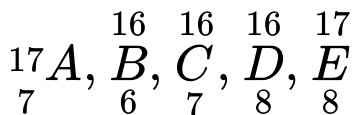
a) Which are the isotopes among the following atoms.

b) Why?



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**24.** A, B, C, D and E five elements (These symbols are not real?)



a) Find out which among them are isotopes.

b) Find out the number of neutrons in each one.



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**25.** Given below are the three isotopes of Hydrogen.



${}^1_1\text{H}$ ,  ${}^2_1\text{H}$ ,  ${}^3_1\text{H}$  (*protium, Deuterium, Tritium*)

a) How do these differ in the subatomic particles present in them?

b) Which isotopic of hydrogen is used in nuclear power plants?



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26. Complete the table.

Element	Atomic Number	Proton	Electron	Neutron
${}^{14}_7\text{N}$	7	...a...	...b...	7
${}^{40}_{18}\text{Ar}$	18	18	...c...	...d...



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**27.** Draw the Bohr model of argon atom.

(Atomic number  $Ar=18$  )



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**28.** Give reason for the following.

a) atoms are electrically, neutral.

b) Most of the mass of an atom is concentrated in its nucleus.



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**29.** In the atom of an element 7 electrons are present in the M shell. : There are 18 neutrons in the nucleus of atom:

a) Write down the electronic configuration of the given atom.

b) What is its mass number?

c). How many electrons are present in it.



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**30.** An atom of aluminium (Al) has 13 electrons and 14 neutrons in it.

a) What is the atomic number of aluminium?

b) What is its mass number?

c) Represent aluminium atom using the symbol.



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**31.** Some details of the atoms X and Y are given below.

- a) Find the mass number of elements X and Y.
- b) Find the relationship between these two atoms.
- c) Write their electronic configuration.

	X	Y
Protons	4	4
Neutrons	4	6



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**32.** Atomic number of an atom  $Z=17$ ,  $A=35$ .

- a) Find the number of protons, electrons and neutrons in the atom.

b) Write the electronic configuration of different shells.

c) Draw the Bohr model of atom.



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**33.** Symbols (not real symbols) of some atoms

are given.  ${}_{8}^{17}P$ ,  ${}_{18}^{40}Q$ ,  ${}_{8}^{16}R$

a) Find the atomic number and mass number of these elements.

b) Which among these are isotopic pairs?

c) Draw the Bohr model of atom Q.



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**34.** True or false? .

- a) All particles in the atom have charge.
- b) Electron and proton have opposite charges.

So atom has no charge.

c) Mass number is the total number of electron, proton and neutron.

d) The number of neutrons are obtained on subtracting atomic number from mass number.



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**35.** Look at their properties in the table. Try to fill in the blanks.

Name of particle	Position in the atom	Charge	Mass
Proton	Nucleus	....a....	1.007270
Electron	...b....	Negative	....c....
....d....	Nucleus	No charge	1.00866U



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**36.** Some questions related to atoms are given below. Choose correct word from the box and answer the questions.

Nucleus, Proton, Atomic number, Mass



number, Electron, Neutron shell a) What is the number of electrons in an atom.

b) Centre of the atom.

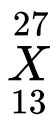
c) Negatively charged particles revolve around the nucleus.



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**37.** An element is represented as follows

(Symbol is not real)



a) Write the electronic configuration of the

element.

b) What is the number of electrons in the shell with highest energy?

c) Find out the number of neutrons in this atom.



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**38.** The mass number of an element is 23 and its atomic number is 11

a) Find the number of electrons.

b) Find the number of neutrons.

c) Write the electronic configuration.



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**39.** An atom has three shells. If there are 4 electrons in the third shell, then

a) What is its atomic number?

b) What is the number of protons?

c) What is the number of electrons?

d) Write the method of arrangement of the electron, in the shell?



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40. The atomic number of an element is 15 .its mass number is 31. Write the electronic configuration and draw its Bohr model.



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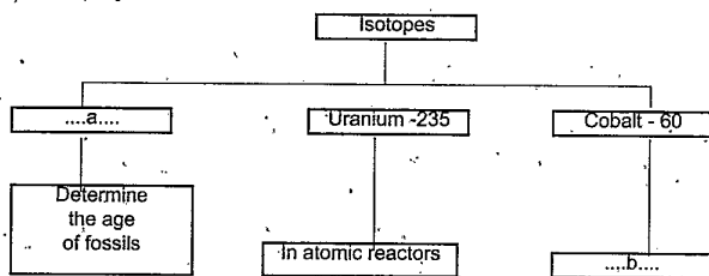
41. Complete the table given below.

Element	Electronic configuration	Protons	Neutrons	Electrons
${}^2_4\text{He}$	2	2	2	2
${}^{59}_{27}\text{Co}$	...a...	27	...b...	...c...
${}^{12}_6\text{C}$	2,4	...d...	...e...	...f...



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42. Fill suitably.



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43. Atoms of elements are made up mainly of protons, electrons and neutrons.

a) Which of these particles are present in the

nucleus of atoms?

b) The discovery of which particle is related to the scientist J. J. Thomson?

c) Name the positively. charged particles?

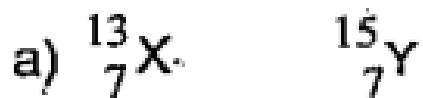
d) Name the scientist who proved that most of. the mass of an atom is concentrated in the nucleus?



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**44.** Choose the pairs of isotopes from the following.

Symbols are. not real.



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## 45. Match the following.

A	B
Used as tracers for identifying the nutrient exchange in plants.	Uranium - 235
Used in nuclear reactors as nuclear fuels	Cobalt - 60
For the diagnosis and treatment of ailments like cancer and tumour	Carbon - 14
To determine the age of fossils	Phosphorous - 31



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