



# CHEMISTRY

## BOOKS - PSEB

### Structure of the Atoms

#### Exercise

1. Compare the properties of electron, proton and neutron



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**2.** What are the limitations of J.J. Thomson model of atom ?



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**3.** What are the limitations of Rutherford's model of atom ?



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4. Describe Bohr's model of atom.



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5. Compare all the proposed models of atom given in the chapter 3 of the text.



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6. Summarize the rules for writing of distribution of electrons in various shells for

the first eighteen elements.



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7. Define valency by taking examples of silicon and oxygen.



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8. Explain with examples : Atomic number



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**9.** Explain with examples : Mass number



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**10.** Explain with examples : Isotopes



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**11.** Explain with examples : Isobars.



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12.  $Na^+$  has completely filled K and L shells.

Explain.



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13. If bromine atom is in the form of say isotopes  ${}_{35}^{79}Br$  (49.7%) and  ${}_{35}^{81}Br$  (50.3%) then calculate the average mass of bromine atom.



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**14.** The average atomic mass of a sample of an element X is 16.2 u, what are the percentages of isotopes  ${}^1_8X$  and  ${}^{18}_8X$  in the sample?



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**15.** If  $Z = 3$ , what would be the valency of the element? Also, name the element



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**16.** Composition of the nuclei of two atomic species X and Y are given as under : Give the mass numbers of X and Y. What is the relation between the two species ?

| X | Y |
|---|---|
| 6 | 6 |
| 6 | 8 |



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**17.** (true/false) J.J. Thomson proposed that the nucleus of an atom contains only nucleons.





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**18.** (true/false) A neutron is formed by an electron and a proton combining together. Therefore, it is neutral



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**19.** (true/false) The mass of an electron is about  $1/2000$  times that of proton.



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20. (true/false) Isotope of iodine is used for making tincture iodine, which is used as a medicine



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21. Put tick ( $\checkmark$ ) against correct choice and cross (x) against wrong choice in following question : Rutherford's alpha-particle scattering experiment was responsible for the discovery of:

A. Atomic Nucleus

B. Electron

C. Proton

D. Neutron

**Answer:**



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**22.** Put tick ( $\checkmark$ ) against correct choice and cross (x) against wrong choice in following question : Isotopes of an element have :

- A. the same physical properties
- B. different chemical properties
- C. different number of neutrons
- D. different atomic numbers.

**Answer:**



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**23.** Put tick ( $\checkmark$ ) against correct choice and cross (x) against wrong choice in following

question : Number of valence electrons in

$Cl^-$  ion are:

A. 16

B. 8

C. 17

D. 18

**Answer:**



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24. Which one of the following is a correct electronic configuration of sodium ?

A. 2,8

B. 8,2,1

C. 2,1,8

D. 2,8,1.

**Answer:**



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