



CHEMISTRY

BOOKS - MAXIMUM PUBLICATION

STRUCTURE OF ATOM

Example

1. Explain the postulates of Rutherford's model of atom?



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2. Explain the limitations of Rutherford's model of atom?



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3. Explain Bohr's model of atom?



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4. Explain the discovery of chargeless particles too-within an atom?



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5. Which are the fundamental particles whose masses are mainly responsible for the mass of an atom?



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6. Is there any relation between the total number of protons and neutrons in an atom and its mass?



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7. Define mass number of an atom?



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8. Which is the particle of an atom that has the possibility of changing of position, which can be exchanged when atoms rub against each other collide or chemically react with other atoms?



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9. Atoms are electrically Neutral. Justify it?



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10. Define atomic number of an element?



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11. Which are the particles whose numbers you can find out if you know the atomic number of an atom?



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12. Which are the particles whose numbers you can find out if you know the atomic number of an atom? Why?



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13. How to write the mass number and atomic number of an element if the symbols are known?



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14. Symbol of certain atoms are given in the table complete the table

Symbol	Atomic number	Mass number	No. of protons	No. of electrons	No. of neutrons
${}^1_1\text{H}$	1	1	1	1	0
${}^4_2\text{He}$	2	4	2	2	2
${}^7_3\text{Li}$	3	7	3	3	4
${}^{12}_6\text{C}$	6	12	6	6	6
${}^{20}_{10}\text{Ne}$	10	20	10	10	10
${}^{40}_{18}\text{Ar}$	18	40	18	18	22



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15. Analyse the electronic configuration of atoms of element 1-18 in the following table:

Element	Atomic Number	No. of Electrons	Electron configuration in shells				
			K	L	M	N	O
H	1	1	1				
He	2	2	2				
Li	3	3	2	1			
Be	4	4	2	2			
B	5	5	2	3			
C	6	6	2	4			
N	7	7	2	5			
O	8	8	2	6			
F	9	9	2	7			
Ne	10	10	2	8			
Na	11	11	2	8	1		
Mg	12	12	2	8	2		
Al	13	13	2	8	3		
Si	14	14	2	8	4		
P	15	15	2	8	5		
S	16	16	2	8	6		
Cl	17	17	2	8	7		
Ar	18	18	2	8	8		



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16. What is maximum electrons that can be accommodated in K shell.



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17. What is maximum electrons in that can be accommodated in L shell.



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18. Rules for filling electrons in shells



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19. Write down the electron configuration of the following elements Draw its Bohr model.

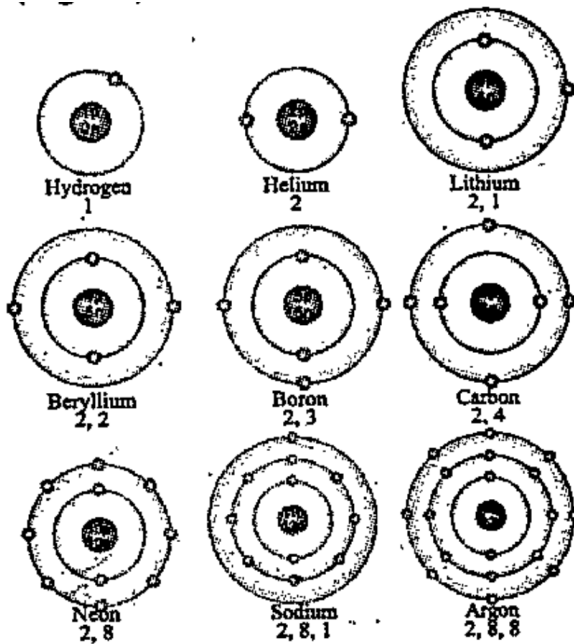
1. $7^{14}N$ 2. $12^{24}Mg$ 3. $16^{32}S$



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20. Bohr model of atoms of certain elements are given below , assess their electronic

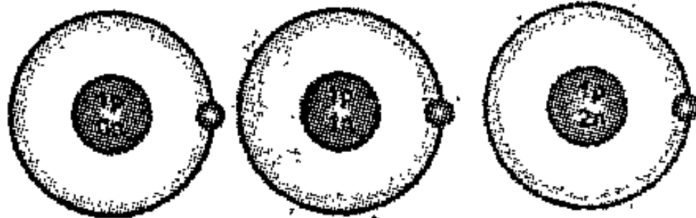
configuration.



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21. You would have understood that the number of protons in an atom determines the

element. Analyse the given Bohr models.



Protium

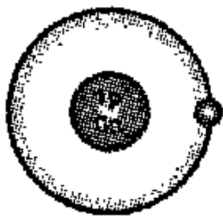
Deuterium

Tritium

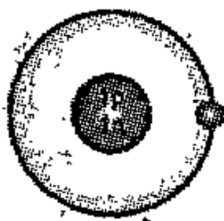


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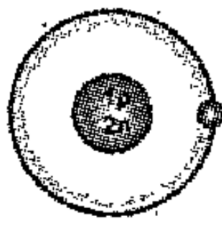
22. Complete the table providing details related to these atoms.



Protium



Deuterium



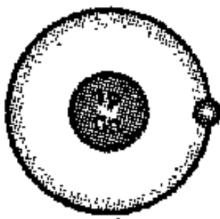
Tritium

Name of atom	Protium	Deuterium	Tritium
Number of protons	1	1	1
Number of neutrons	0	1	2
Number of electrons	1	1	1
Atomic number	1	1	1
Mass number	1	2	3

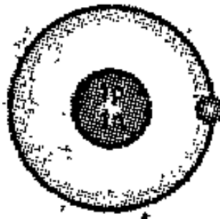


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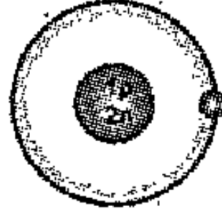
23. Among these atoms which is the particle that is differs in numbers?



Protium



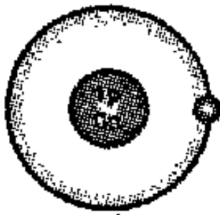
Deuterium



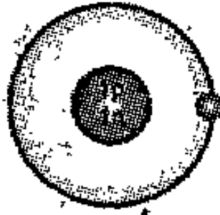
Tritium

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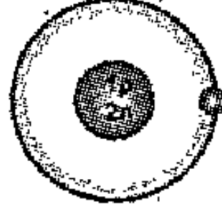
24. Which inferences can you arrive at when you examine the atomic number and mass number of these elements?



Protium



Deuterium



Tritium



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25. What is meant by Isotopes?



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26. Which isotope of Hydrogen is used in atomic reactors?



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27. Write the isotopes of carbon?



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28. Which isotopes are used as tracers for identifying the nutrient exchange in plants?



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29. Which isotope of Uranium is used in atomic reactors as fuel?



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30. what is meant by isobar?



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31. Symbols of certain isotopes are given in table ,Complete the table writing their atomic number, mass number, number of protons,

electrons and neutrons.

Symbols	Atomic number	Mass number	Protons	Electrons	Neutrons
${}^15_8\text{O}$	8	15	8	8	7
${}^{16}_8\text{O}$	8	16	8	8	8
${}^{17}_8\text{O}$	8	17	8	8	9



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32. Name of some scientists and their contributions are given in in the following table. Match them suitably in the

chronological order.

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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33. Atomic number of an atom $Z=17$, Mass number 35.

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



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34. Atomic number of an atom $Z=17$, Mass number 35.

Write the electronic configuration of different shells.



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35. Atomic number of an atom $Z=17$, Mass number 35.

Draw the Bohr model of atom.



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36. The mass number of an atom is 31. The M shell of this atom contains 5 electrons.

Write the electronic configuration.



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37. The mass number of an atom is 31. The M shell of this atom contains 5 electrons.

What is the atomic number of this atom?



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38. The mass number of an atom is 31. The M shell of this atom contains 5 electrons.

How many neutrons does this atom have?



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39. The mass number of an atom is 31. The M shell of this atom contains 5 electrons.

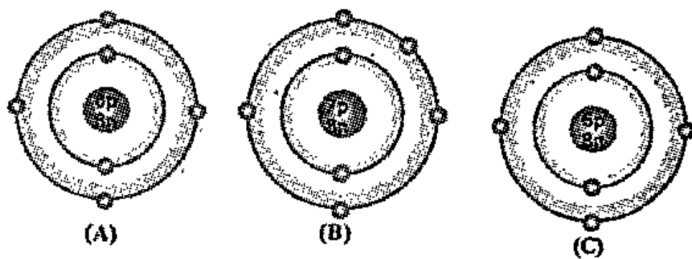
Draw the Bohr model of the atom.



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

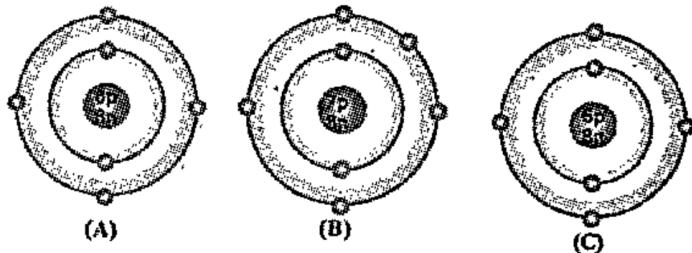
Write the atomic number, mass number and
electronic configuration of the atoms.



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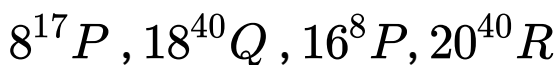
41. Bohr models of atoms A, B, C, are given
(Symbols are not real).

Among these, which are isotopes? Why?



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

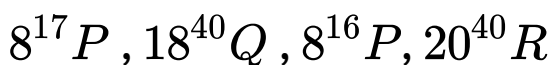


Find the atomic number and mass number of these elements.



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



Which among these, are isotopic pairs?



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

$8^{17}P$, $18^{40}Q$, $8^{16}P$, $20^{40}R$

Draw the Bohr model of atom Q



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45. Write the atomic number of an atom is 18 and mass number is 40

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



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46. Write the atomic number of an atom is 18 and mass number is 40

Write the electronic configuration of different shells.



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47. Write the atomic number of an atom is 18 and mass number is 40

Draw the Bohr model of the atom



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48. The 3rd shell ie. M shell of an atom contains 3 electrons. The mass number is 27.

Write the atomic number of this atom.



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49. The 3rd shell ie. M shell of an atom contains 3 electrons. The mass number is 27.

Write the electronic configuration



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50. The 3rd shell ie. M shell of an atom contains 3 electrons. The mass number is 27.

How many electrons, neutrons does this atoms have?



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51. The 3rd shell ie. M shell of an atom contains 3 electrons. The mass number is 27.

Draw the Bohr model of atom?



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52. Write the uses of

Carbon -14



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53. Write the uses of

Phosphorous - 31



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54. Write the uses of

Iodine - 131 and cobalt 60



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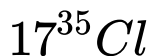
55. Write the uses of

Uranium - 235



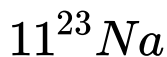
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56. Write the electronic configuration and draw the Bohr model?



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57. Write the electronic configuration and draw the Bohr model?



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58. $6^{12}C$, $8^{40}Ar$, $6^{14}C$, $20^{40}Ca$

Find the isotopes and isobars pairs among them. Justify it?



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