



CHEMISTRY

BOOKS - MAXIMUM PUBLICATION

CLASSIFICATION OF ELEMENTS AND THE PERIODIC TABLE

Example

1. Explain the earlier attempt of classification by Lavoiser?



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2. Explain Newland's law of octaves?



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3. Define Mendeleev's periodic law?



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4. What is meant by groups and periods in the periodic table?



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5. Evaluate the Mendeleev's periodic table and find the following.

Total number of periods



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6. Evaluate the Mendeleev's periodic table and find the following.

Total number of Groups



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7. Evaluate the Mendeleev's periodic table and find the following.

Are the same elements showing similar properties arranged in the same group or same period?





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8. Advantages of Mendeleev's periodic table?



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9. Explain the limitation of Mendeleev's Periodic table?



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10. State and explain modern periodic table and modern periodic law?



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11. How many periods in the modern periodic table?



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12. Which is the shortest period?



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13. Number of elements in the third period?



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14. Total number of groups?



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15. Explain representative elements?



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16. Do in representative elements do they include metalloids [eg. Si, Ge, As, Sb...] exhibiting the characteristics of metals and non metals?



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17. Are there elements existing in solid, liquid and gaseous state find examples?





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18. Write the electronic configuration of elements with atomic number 1-10



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19. List the elements in group 18



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20. write electronic configuration of group 18 elements



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21. How many electrons are there in the outermost shell of each element?



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22. The elements do not normally take part in chemical reactions. Find the reason?



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23. Which group of elements belong to transition elements?



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24. Find out whether elements familiar to you are present in these groups?



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25. Aren't transition elements metals?



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26. What are the characteristics of transition elements?



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27. Which element is next to lanthanum with atomic number 57 of group 6 in the periodic table?



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28. Find out the position allotted to the elements with atomic number 58-71?



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29. Is the same way aren't the elements with atomic number 90 to 103 of period 7 give separate position at the bottom of the periodic table?



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30. What is meant by inner transition elements?



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31. Electronic configuration of group I elements of the periodic table are given

Element	Atomic number	Electron configuration	Group	Period
H	1	1	1	1
Li	3	2,1	1	2
Na	11	2,8,1	1	3
K	19	2,8,8,1	1	4
Rb	37	2,8,18,8,1	1	5
Cs	55	2,8,18,18,8,1	1	6
Fr	87	2,8,18,32,18,8,1	1	7

What is the peculiarity seen in the electronic configuration of the outer most shell of these elements?



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32. Which are the electrons shows the chemical properties of elements?



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33. Is there any relationship between the group number and the number of electrons present in the outermost shell? What is it?



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34. Observe figure the electronic configuration of the second period elements of the group from 13-18 given below.

Analyse table 3.1 and find whether there is any relation between the number of shells in an atom and the number of periods?

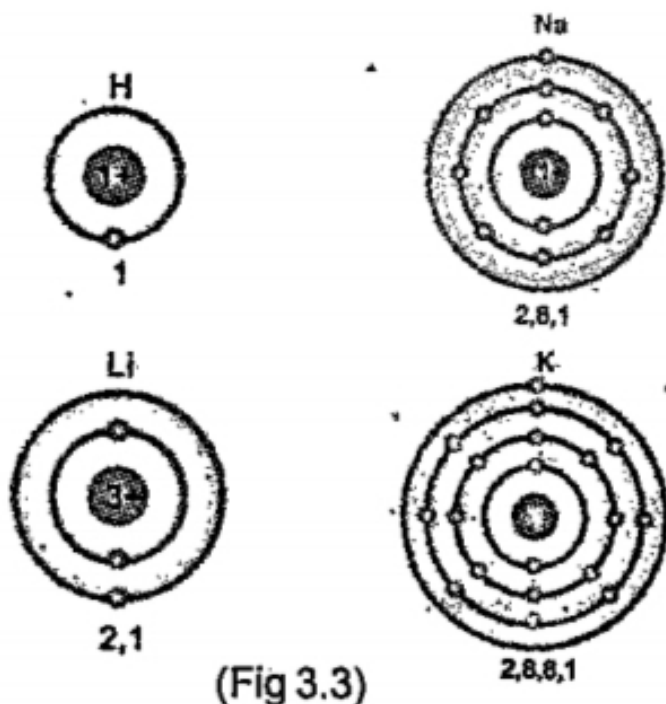
13	14	15	16	17	18
B	C	N	O	F	Ne
2,3	2,4	2,5	2,6	2,7	2,8



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35. Are you familiar with the Bohr model of an atom? See the Bohr model of atoms of certain element, group I.

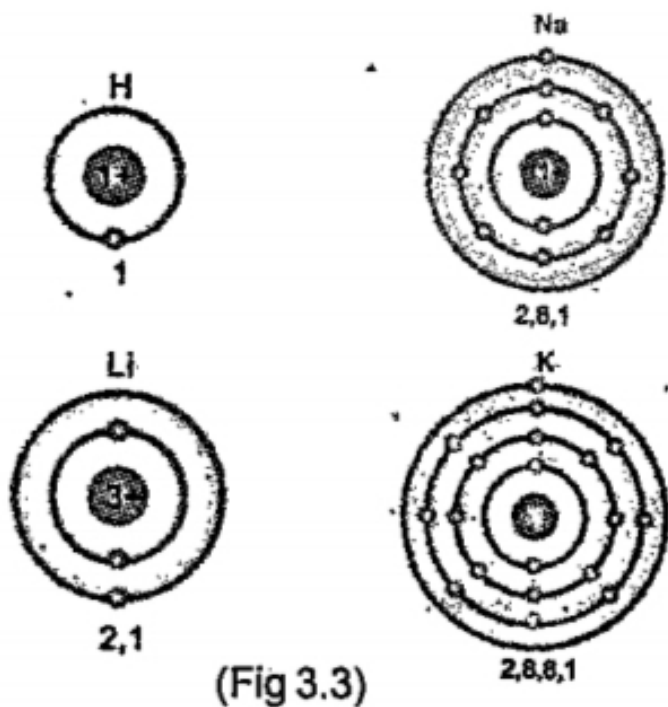
Which one is the smallest?



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36. Are you familiar with the Bohr model of an atom? See the Bohr model of atoms of certain element, group I.

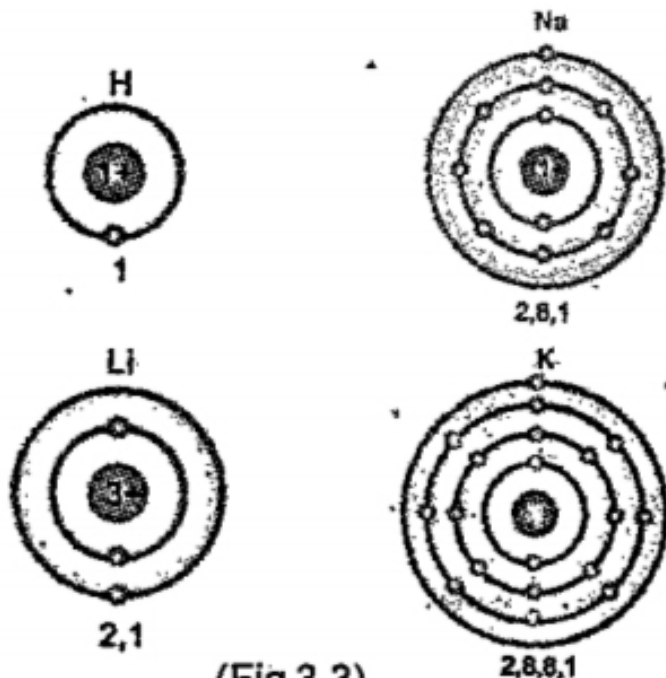
What happens to the size of an atom when we move down the group?



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37. Are you familiar with the Bohr model of an atom? See the Bohr model of atoms of certain element, group I.

Which among them is the biggest ?



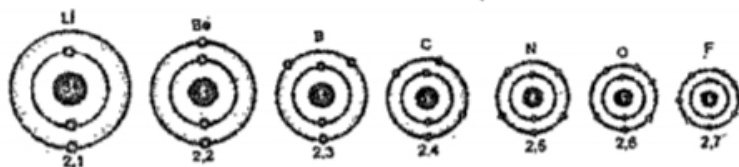
(Fig 3.3)



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38. The representation of Bohr model of elements with atomic number 3 to 9 in the second period of the periodic table.

Is there any change in the number of shells with the increase in atomic number?



(Fig. 3.3)



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39. What happens to the nuclear charge with increase in atomic number?



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40. You have understood how sodium chloride is formed by combining sodium and chlorine atoms. The Bohr model of sodium and chlorine are given below.

Which among these atom lose electrons?



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41. How the ions are formed?



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42. Define ionization energy?



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43. What are the factors affecting the ionisation energy?



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44. When the size of an atom increases, does the attraction of the nucleus on the outermost electron increase or decrease?



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45. Then what is the change in ionization energy?



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46. Can you find out how ionization energy changes as we move from top to bottom in a group?



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47. What is the general trend in the variation of ionisation energy on moving across a period from left to right?



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48. Find how ionization energy changes with increase in nuclear charge?



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49. Define electronegativity?



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50. How size of an atom influence the electronegativity?



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51. What is the basis for the chemical properties of metals and non metals?



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52. What is relationship between metallic character and the size of an atom?



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53. How do the metallic character and non metallic character vary while moving from left to right in a period? Arriving at a conclusion by assessing the size of atom?



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54. Don't you think that there is a relationship between ionization energy and metallic non metallic character? Is the element with highest ionization energy metallic or non metallic?



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55. Then what about those having the low ionization energy?



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56. Isn't there a relationship between electronegativity and metallic, non metallic character? Explain the relationship?



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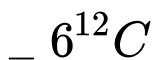
57. Explain metalloids?



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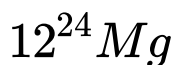
58. Symbols of certain elements are given.

Write their electronic configuration and find the period and group in which they are included.



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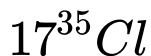
59. Symbols of certain elements are given. Write their electronic configuration and find the period and group in which they are included.



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60. Symbols of certain elements are given. Write their electronic configuration and find the period and group in which they are

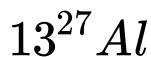
included.



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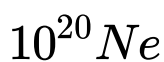
61. Symbols of certain elements are given.

Write their electronic configuration and find the period and group in which they are included.



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62. Symbols of certain elements are given. Write their electronic configuration and find the period and group in which they are included.



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63. There are three shells in the atom of element 'X', 6 electrons are present in its outermost shell.

Write the electronic configuration of the element.



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64. There are three shells in the atom of element 'X', 6 electrons are present in its outermost shell.

What is its atomic number?



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65. There are three shells in the atom of element 'X', 6 electrons are present in its outermost shell.

In which period does this element belong?



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66. There are three shells in the atom of element 'X', 6 electrons are present in its outermost shell.

In which group is this element included?





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67. There are three shells in the atom of element 'X', 6 electrons are present in its outermost shell.

Write the name and symbol of this element.



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68. There are three shells in the atom of element 'X', 6 electrons are present in its outermost shell.

To which family of element does is this element belong to?



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69. There are three shells in the atom of element 'X', 6 electrons are present in its outermost shell.

Draw and illustrate the Bohr atom model of this element.



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70. Electronic configurations of elements P, Q, R and S are given below. (These are not actual symbols).

P - 2, 2

Q - 2, 8, 2

R - 2, 8, 5

S - 2, 8

Which among these elements are included in the same period?



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71. Electronic configurations of elements P, Q, R and S are given below. (These are not actual symbols).

P - 2, 2

Q - 2, 8, 2

R - 2, 8, 5

S - 2, 8

Which are those included in the same group?



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72. Electronic configurations of elements P, Q, R and S are given below. (These are not actual symbols).

P - 2, 2

Q - 2, 8, 2

R - 2, 8, 5

S - 2, 8

Which among them is a noble gas?



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73. Electronic configurations of elements P, Q, R and S are given below. (These are not actual symbols).

P - 2, 2

Q - 2, 8, 2

R - 2, 8, 5

S - 2, 8

To which group and period does the element R belong?



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74. An incomplete form of the periodic table is given below. Write answers to the questions connecting the position of elements in it.

Which among them are transition elements?

	1																18
1	A	2															
2	B	E												I	K	L	M
3	C	F	3	4	5	6	7	8	9	10	11	12	J				N
4	D					G	H										



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75. An incomplete form of the periodic table is given below. Write answers to the questions connecting the position of elements in it.

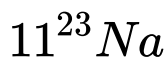
Which is the element that resembles E the most in its properties?

	1																18
1	A	2															
2	B	E												I	K	L	M
3	C	F	3	4	5	6	7	8	9	10	11	12		J			N
4	D					G	H										



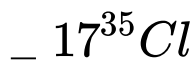
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76. Symbols of certain elements are given write down the electronic configuration and find the period and group in which they are included.



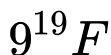
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77. Symbols of certain elements are given write down the electronic configuration and find the period and group in which they are included.



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78. Symbols of certain elements are given write down the electronic configuration and find the period and group in which they are included.





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79. A, B, C, D are four elements. The electronic configuration is given below and find the answers in the following (Hint. The symbols are not real)

A-2,2

B- 2, 8, 5

C- 2, 7

D- 2, 8, 2

Find the elements belongs to same period?



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80. A, B, C, D are four elements. The electronic configuration is given below and find the answers in the following (Hint. The symbols are not real)

A-2,2

B- 2, 8, 5

C- 2, 7

D- 2, 8, 2

Find the elements belongs to same group.



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81. A, B, C, D are four elements. The electronic configuration is given below and find the answers in the following (Hint. The symbols are not real)

A-2,2

B- 2, 8, 5

C- 2, 7

D- 2, 8, 2

'C' belongs to which period and group?



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82. An incomplete form of the periodic table is given below write answers in the question connecting the position of elements in it.

Which element belongs to Noble gas elements?

1																	18	
A	2																	
C	F	3	4	5	6	7	8	9	10	11	12							N
D					P	Q	R	S	T									



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