



CHEMISTRY

BOOKS - MBD

PERIODIC CLASSIFICATION OF ELKHOENTS

Example

1. Did doberiner's triads also exist in the columns of newlands's octaves? Compare and

find out.



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2. What were the limitations of deBerliner's classification?



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3. What were the limitations of Newland's law of octaves?



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4. Use Mendeleev's periodic table to predict the formula for the oxides of following elements:

K,C,Ba,Al



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5. Besides gallium which other elements have since been discovered to fill the gaps left by mendeleev in his periodic table?



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6. What were the criteria used by Mendeleev in creating his periodic table?



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7. What were the criteria used by Mendeleev in creating his periodic table?



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8. Why do you think the noble gases are placed in a separate group?



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9. How could modern periodic table remove various anomalies of Mendeleev periodic table/



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10. Name two elements you would expect to show same kind of chemical reactivity as magnesium what is the basis for your choice?



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11. Name three elements that have only a single electron in their outermost shells



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12. Name two elements that have two electrons in their outermost shells



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13. Name: three elements with filled outermost shells



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14. Lithium, sodium potassium are all metals that react with water to liberate hydrogen gas
is there any similarity in the atoms of these elements



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15. Helium is an unreactive gas and neon is gas of extremely low reactivity

What if anything do their atoms have in common?





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16. In the modern periodic table of the first ten elements which are metals?



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17. By considering their position in the periodic table, which one of the following elements would you expect to have the most metallic characteristics?

Ga Ge As Se Be.



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18. Which of the following statements is not a correct statement about the trends when going from left to right across the periods of periodic table.

A. The elements become less metallic in nature

B. The number of valence electrons increases

C. The atoms lose their electrons more easily

D. The oxides become more acidic,

Answer:



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19. Element 'X' forms a chloride with the formula XCl_2 which is a solid with a high melting point, X would most likely be in the

same group of the periodic table as:

Na, Mg, Al, Si,



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20. Which element has: Two shells both of which are completely filled with electrons?



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21. Which element has: The electronic configuration 2, 8, 2?



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22. Which element has: A total of three shells, with four electrons in its valence shell?



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23. Which element has: A total of two shells with three electrons in its valence shell?



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24. Which element has: Twice as many electrons in its second shell as in its first shell?



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25. What property do all elements in the same column of the periodic table as boron have in common?



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26. What property do all elements in the same column of the periodic table as fluorine have in common?



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27. An atom has electronic configuration 2,8,7. What is the atomic number of this elements?



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28. An atom has electronic configuration 2,8,7.

To which of the following element would it be chemically similar?(atomic number are given in following

N(7),F(9),Ar(18)



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29. The position of three elements A, B and C in the periodic table are as shown below:

Group 16	Group 17
.....
.....	A
.....
B	C

State

whether a is a metal or non-metal



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30. The position of three elements A, B and C in the periodic table are as shown below:

Group 16	Group 17
.....
.....	A
.....
B	C

State

whether C is more reactive or less reactive than A.



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31. The position of three elements A, B and C in the periodic table are as shown below: Will C be larger or smaller in size than B



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32. The position of three elements A, B and C in the periodic table are as shown below:

Which type ion, cation or anion, will be formed by elements A ?



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33. Nitrogen(atomic number 7) and phosphorus (atomic number 15) belong to group 15 of the periodic table. Write the electronic configurations these two elements.Which of these will more electronegative? Why?



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34. How does the electronic configuration of an atom relate to its position in the modern periodic table?



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35. In the modern periodic table, calcium (atomic number 20) is surrounded by elements with atomic numbers 12, 19, 21, and 38. Which of these have physical and chemical properties resembling calcium?



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36. Compare and contrast the arrangement of elements in mendeleev's periodic table and the modern periodic table?



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37. What do you understand by Doberiner's traids? Give some examples to supprot it?



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38. What was Doberiner's basis of clasifying elements?



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39. Give a brief discussion of the Mendeleev's classification of the elements



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40. Why do we classify elements?



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41. What were the two criteria used by mendeleev in creating his periodic table?



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42. Why did mendeleev leave some gaps in his periodic table?



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43. In mendeleev's periodic table, why was there no mention of noble gases like helium, neon and argon?



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44. Would you place the two isotopes of chlorine Cl-35 and Cl-37 because of their different atomic masses or in the same slot

because their chemical properties are the same? Justify your answer



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45. How did mendeleev's periodic table help in the discovery of new elements?



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46. Discuss some major merits of the Mendeleev's periodic table



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47. Point out the major defects in the mendeleev's periodic table?



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48. Give a brief description of long form of periodic table?



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49. What is periodicity? What is the cause of periodicity?



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50. What were the two major shortcomings of Mendelev's periodic table? How have these been removed in the modern periodic table?



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51. Two elements X and Y have atomic numbers 12 and 16 respectively. Write the electronic configuration for these elements. To which period of the modern periodic table do these two elements belong? What type of bond will be formed between them and why?



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52. Why is long form of periodic table regarded better than mendeleev's?periodic

table?



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53. How could modern periodic table remove various anomalies of Mendeleev periodic table/



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54. The following tables show the position of six elements A, B, C, D, E and F in the periodic

table? Using the table answer the following question: Which element will form only covalent compounds?

Groups	1	1	3 to 12	13	14	15	16	17	18
Periods									
2.	A					B			C
3.		D			E				F



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55. The following tables shows the position of six elements A, B, C, D, E and F in the periodic table? Using the above table answer the following question: which element is a metal

with valency 2 ?

Groups	1	1	3 to 12	13	14	15	16	17	18
Periods									
2.	A					B			C
3.		D			E				F



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56. The following tables shows the position of six elements A, B, C, D, E and F in the periodic table? Using the table answer the following question: which element is non- metal with valency of 3?

Groups	1	1	3 to 12	13	14	15	16	17	18
Periods									
2.	A					B			C
3.		D			E				F



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57. The following tables shows the position of six elements A, B, C, D, E, and F in the periodic table? Using the table answer the following question: Out of D and E, which one has a bigger atomic radius and why?

Groups	1	1	3 to 12	13	14	15	16	17	18
Periods									
2.	A					B			C
3.		D			E				F



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58. The following tables shows the position of six elements A, B, C, D, E ,and F in the periodic table? Using the table answer the following question: Write a common name for the elements C and F.

Groups	1	1	3 to 12	13	14	15	16	17	18
Periods									
2.	A					B			C
3.		D			E				F



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59. The question refers to the elements of the periodic table with atomic number from 3 to

18.

Elements	A	B	C	D	E	F	G	H
Atomic Numbers	3	4	5	6	7	8	9	10
Elements	I	J	K	L	M	N	O	P
Atomic Numbers	11	12	13	14	15	16	17	18

Which of these:

is/are noble gas?

is a halogen?

is an alkali metal?

Write the electron configuration of G.

If A combines with F, what would be the formula of resulting compound?



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60. An element belongs to 3rd period and 17th group of periodic table. Find its electronic configuration and valence electrons?



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61. How does atomic size of elements vary on moving from left to right in a period



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62. How does atomic size of elements vary on moving from top to bottom in a group



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63. Define periodic law. Why was it necessary to change the basis of classification from atomic masses to atomic numbers?



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64. What do you understand by the term periodicity? Do the properties of two elements placed in a same group have the similar properties? Illustrate.



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65. What are the limitations of Dobereiner's classification of elements?



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66. What property do all elements in the same column of the periodic table as boron have in common?



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67. Indicate the atomic number of non metals of period 3 of modern periodic table



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68. Indicate the atomic number of elements of period 3 of modern periodic table: element forming negative ions.



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69. Indicate the atomic number of elements of period 3 of modern periodic table: elements forming positive ions



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70. Indicate the atomic number of elements of period 3 of modern periodic table: elements forming positive ions



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71. Define atomic radius, give its units.



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72. How does atomic radius vary down a group and along a period?



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73. Write down the electronic configuration of elements with atomic numbers 2,14,17,19 indicate the group of the periodic table to which they belong?



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74. Locate the following group in the table:
alkali metals



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75. Locate the following group in the table:
halogens



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76. Locate the following group in the table:
alkaline earth metals



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77. Locate the following group in the table:
noble gases.



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78. What properties do the elements in the same vertical column of the periodic table as fluorine have in common?



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79. Write the chemical electronic configuration of nitrogen ($N=7$) and phosphorous ($P=15$).



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80. Name the members of the alkaline earth family



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81. To which group and period do they belong:
sodium and calcium



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82. Which member is the least reactive in nature?



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83. Why are the members of group 1 called alkali metals?



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84. An atom has electronic configuration 2,8,7.

What is the atomic number of this elements?



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85. An atom has electronic configuration 2,8,7.

To which of the following element would it be chemically similar?(atomic number are given in following

N(7),F(9),Ar(18)



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86. What physical and chemical properties of elements were used by mendeleev in creating his periodic table ? List two observations which posed a challenge to mendeleev's periodic law.



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87. What are amphoteric oxides? give two examples of amphoteric oxides?



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88. Why is it that non-metals do not displace hydrogen from dilute acids?



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89. What are noble gas elements ? Why are they so called?



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90. How is metallic character of an element defined? How does the metallic character of the elements change in a group?



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91. Why do the elements present in a group show similar chemical properties?



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92. How does the reactivity of the metals vary in a group?



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93. Name the elements present in the second period. Give their electronic configuration.



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94. Why do not the elements present in period show same valency?



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95. The metallic character of the elements in a period decreases from left to the right , justify .



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96. Give symbols for: a metal belonging to second group of the periodic table



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97. Give symbols for: A metal belonging to the third group of the periodic table



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98. Give symbols for: two non-metals belonging to the halogen family.



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99. Write electronic structures of: potassium



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100. Write electronic structures of: lithium



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101. Write electronic structures of: fluorine



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102. Name two other elements which are in the same family as (i) carbon (ii) fluorine(iii) sodium



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103. Carbon (atomic number 6) and silicon (atomic number 14) are elements in the same group of the periodic table. Give the electronic arrangements of the carbon and silicon atoms and state the groups in which these elements occur.



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104. Sodium and aluminium have atomic numbers of 11 and 13 respectively. They are

separated by one element in the periodic table and have valencies of 1 and 3 respectively. chlorine and potassium are also separated by one element in the periodic table (their atomic numbers are 17 and 19 respectively) and yet both have valency of one. explain your answer



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105. Give the atomic number and electronic distribution of: The third alkali metal



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106. Give the atomic number and electronic distribution of: The second alkaline earth metal



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107. Give the atomic number and electronic distribution of: The first halogen



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108. Give the atomic number and electronic distribution of: the second noble gas.



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109. Observe the following elements in the modern periodic table?

Group → Period ↓	1	2	13	14	15	16	17	18
2	A							C
3	D						B	



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110. Match the following:

Match the following :

(a) Fluorine

(i) Metalloid

(b) Neon

(ii) Halogen

(c) Sodium

(iii) Noble gas

(d) Arsenic

(iv) Alkali metal



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111. How many electrons can be present in the valence shells of metal atoms and non-metal atoms?



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112. What is the basis of modern periodic table?



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113. Write electronic configuration of phosphorous?



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114. which have greater atomic size magnesium or aluminium?



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115. How are elements classified ?



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116. Why are the members of group 1 called alkali metals?



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117. What is the basis of modern periodic table?



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118. Name the group to which halogens belongs?



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119. Name the second element of group 14?



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120. How many valence electrons are present in halogen elements?



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121. How many elements are present in 4th period?





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122. How many electrons are present in Mg^{2+} ion?



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123. Out of Na and Mg which Has larger size?



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124. What is the valency of nitrogen?



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125. Out of Na and K which is more reactive?



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126. Name the group number of halogen family?



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127. Name the last element of third period?



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128. What is dobereiner's triad?



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129. A,B and C constitute the doberiner's traid.

Atomic mass of a and c are 7 and 23

respectively' calculate atomic mas of B.



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130. Name the elements discovered after mendeleev's periodic table?



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131. what do you mean by isotopes. give two example.



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132. How does atomic radii as we move from left along a period in the periodic table?



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133. An element has the electronic configuration 2,8,3 what is its group number in modern periodic table?



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134. Give the basis of Dobereiner's classification.



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135. Give the characteristics of Dobereiner's triads?



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136. What is the drawback of doberenier's traids?



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137. There are three elements X,Y,Z atomic masses of X and Z are 35.5 and 127. what will be atomic mass of Y on the basis of dobereiner's traids?



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138. Write newland's law of octaves for classification of elements.



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139. How many element were calssified by newland.



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140. Indicate the group number and period number of phosphorous in the modern periodic table



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141. An element has the electronic configuration 2,8,8,2 indicate its group and period in the modern periodic table?



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142. An element M is in the group 13 and period 3 modern periodic table write the formula of its oxide.



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143. Give the groups and periods in the modern periodic table?



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144. Give the groups and periods in the modern periodic table?



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145. Give the electronic configuration of ${}_{17}\text{Cl}^{35}$ also indicate its position in the periodic table.



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146. Give the name and electrons configuration of element with atomic number 9.



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147. What is modern periodic law?



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148. Who gave newland law of octaves



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149. Define mendeleev's periodic law



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150. What is the basis of mendeleev's and modern table?



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151. How many groups are present in mendeleev's period table?



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152. Name the next element after phosphorous in modern period table?



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153. Give the group number of nitrogen and phosphorus.



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154. Why Mg and Al does not belong to same group?



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155. In which group noble gases are present ?



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156. Na and S are present in the third period of modern periodic table which is more metallic and why?



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157. What is metallic character?



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158. How metallic character vary on moving from left to right along a period?



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159. Who gave the law of octaves?

A. Newland

B. Dobereiner

C. Mendeleev

D. Mayer

Answer:



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160. In Mendeleev's periodic table which element was discovered in the gap between Boron and Aluminium?

A. Na

B. Ca

C. Ga

D. Ba

Answer:



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161. According to Mandeleev's periodic law, the elements are arranged in order of a increasing:

- A. Atomic numbers
- B. Decreasing atomic number
- C. Decreasing atomic masses.
- D. increasing atomic masses.

Answer:



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162. Which element occupied gap left in Mandeleev's periodic table?

- A. Germanium
- B. Chlorine
- C. Oxygen
- D. Silicon

Answer:



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163. An element has the electronic configuration 2,8,2. It is present in group:

- A. 2
- B. 8
- C. 18
- D. 10

Answer:



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164. Which element shows mettalic character?

A. 2,8,2

B. 2,8,4

C. 2,8,8

D. 2,7

Answer:



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165. Which shell is outer and largest shell for elements

A. K

B. L

C. M

D. N

Answer:



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166. Out of Na and Mg which Has larger size?

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167. Fill in the blanks: Number of elements known in mendeleev's periodic table were..... .

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168. Fill in the blanks: Oxygen and sulphur belong to same.....



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169. Fill in the blanks: The elements of group 17 are called.....



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170. Fill in the blanks: The valency of the members of noble gas family is



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171. Fill in the blanks: The halogens belong to group.....



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