CHEMISTRY

BOOKS - ICSE

THE PERIODIC TABLE

Exercise 5 B

1. State modern periodic law of classification of elements.

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2. How many periods and groups are there in the modern periodic table ?

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3. What is the main characteristic of the last elements in the periods of a periodic table? What is the general name of such elements ?

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4. What is meant by a group in the periodic table?

5. What is meant by a group in the periodic table?

6. From the standpoint of atomic structure, what determines which element will be the first and which the last in a period of the periodic table?

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7. What are the following groups known as ? (i) Group 1 (ii) Group 17 (iii) Group 18

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8. Name two elements of each group.

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9. What is the number of elements in:

1. 1^{st} period and

2. 2^{nd} period of modern periodic table.

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10. The total number of elements in period 3 of the periodic table is:

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11. How does number of (i) valence electrons (ii) valency, vary on moving from left to right: in the second period of a periodic table ?

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12. How does number of (i) valence electrons (ii) valency, vary on moving from left to right: in the third period of a periodic table ?

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13. How do atomic structures (electron arrangement) change in a period with increase in atomic numbers, moving left to right?

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14. This question refers to elements of the periodic table with atomic numbers from 3 to 18. In the table below, some elements are shown by letters, even though the letters are not the usual symbols of the elements. 

Which of these is :

(i) a noble gas? (ii) a halogen ? (iii) an alkali metal ? (iv) an element with valency 4?

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15. This question refers to elements of the periodic table with atomic numbers from 3 to 18. In the table below, some elements are shown by letters, even though the letters are not the usual symbols of the elements. 

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

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16. This question refers to elements of the periodic table with atomic numbers from 3 to 18. In the table below, some elements are shown by letters, even though the letters are not the usual symbols of the elements. 

What is the electronic configuration of G?

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17. Sodium and aluminium have atomic numbers 11 and 13, respectively. They are

separated by one element in the periodic table, and have valencies 1 and 3 respectively. Chlorine and potassium are also separated by one element in the periodic table (their atomic numbers being 17 and 19, respectively) and yet both have valency 1. Explain.

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18. Helium is an unreactive gas and neon has very poor reactivity. What do these elements have in common?

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19. In which part of a group would you separately expect the elements to have :

the greatest metallic character ?

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20. In which part of a group would you separately expect the elements to have :

the largest atomic size?

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21. What happens to number of valence electrons in atoms of elements as we go down a group of the periodic table ?

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22. Name the noble gas having atomic number 18.

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23. Name all the noble gases and the group to which they belong to.

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24. Element having atomic number 20 belongs to which group of periodic table.

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25. Name the noble gas having atomic number

10

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26. Write electronic configuration of element

$_{17}^{35}T$.

What is the group number of T?

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27. Write electronic configuration of element

$_{17}^{35}T$.

What is the period number of T ?

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28. Write electronic configuration of element

$_{17}^{35}T$.

How many valence electrons are there in an atom of T?

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29. Write electronic configuration of element

$_{17}^{35}T$.

What is the valency of T ?

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30. Write electronic configuration of element

$_{17}^{35}T$.

Is it a metal or a non-metal ?

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31. Write electronic configuration of element $_{17}^{35}T$.

State number of protons and neutrons in T.

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Exercise 5 C

1. Element P has atomic number 19. To which group and period, does P belong? Is it a metal or a non- metal ? Why?

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2. An element belongs to the 3rd period and Group IIIA (13) of the periodic table. State :

the number of valence electrons,

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3. An element belongs to the 3rd period and Group IIIA (13) of the periodic table. State :

the valency,

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4. An element belongs to the 3rd period and Group IIIA (13) of the periodic table. State :

if it is a metal or non metal ?

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5. An element belongs to the 3rd period and Group IIIA (13) of the periodic table. State :

the name of the element.

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6. Name or state the following with reference to the elements of the first three periods of the periodic table.

Noble gas with duplet arrangement of electrons.

7. Name or state the following with reference to the elements of the first three periods of

the periodic table.

Metalloid in Period 3.

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8. Name or state the following with reference to the elements of the first three periods of the periodic table.

Valency of elements in Group 14 and 15.

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9. Name or state the following with reference to the elements of the first three periods of the periodic table.

Noble gas having electronic configuration : 2, 8, 8.

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10. Name or state the following with reference to the elements of the first three periods of

the periodic table.

Group whose elements have zero valency.

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11. Name or state the following with reference to the elements of the first three periods of the periodic table.

A covalent compound formed by an element in Perid 2 and a halogen.

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12. Name or state the following with reference to the element of the first three periods of the periodic table.

Non-metallic element present in Period 3 of Groups 15 and 16.

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13. Name or state the following with reference to the elements of the first three periods of the periodic table.

An electrovalent compound formed by an alkalin earth metal and a halogen.

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14. Name or state the following with reference to the elements of the first three periods of the periodic table.

Bridge elements of Period 3 of Group 1, 2 and 3.

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15. Name or state the following with reference to the elements of the first three periods of the periodic table.

Alkali metal in Period 3 that dissolves in water giving a strong alkali.

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16. Name or state the following with reference to the elements of the first three periods of the periodic table.

Typical elements of Groups 14 and 15.

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17. Name or state the following with reference to the elements of the first three periods of the periodic table.

Alkaline earth metal in Period 3.

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18. Halogens belong to which group of periodic table. Name any 2 halogens

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19. Name elements of group 17. What are they called as?

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20. Relative atomic mass of a light element up to calcium is approximately ..... its atomic number.

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21. Horizontal rows of periodic table are called

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22. Going across a period left to right, atomic size .....

Watch Video Solution

23. Moving down in the second group, number of valence electrons .....

Watch Video Solution

24. Moving down in the second group, number of valence electrons .....

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25. Name the alkali metals. How many electrons(s) do they have in their outermost orbit.

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26. Take any one alkali metal and write its reaction with (i) oxygen (ii) water (iii) acid.

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27. Name the method by which alkali metals can be extracted.

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28. What is the colour of the flame of sodium and potassium ?

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29. An element A has 2 electrons in its, fourth shell. State its atomic number

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30. An element A has 2 electrons in its, fourth shell. State its electronic configuration

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31. An element A has 2 electrons in its, fourth shell. State its valency

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32. An element A has 2 electrons in its, fourth shell. State position in the periodic table

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33. An element A has 2 electrons in its, fourth shell. State is it a metal or a non-metal

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34. An element A has 2 electrons in its, fourth shell. State is it an oxidizing or reducing agent ?

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35. Name the first three alkaline earth metals.

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36. (a)Name the first three alkaline earth metals.

(b) Write their reactions with dil hydrochloric acid.

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37. How do alkaline earth metals occur in nature ?

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38. Write the electronic configuration of the first two alkaline earth metals.

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39. Give reasons.

Alkali metals are kept in inert solvent.

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40. Give reasons.

Alkali metals and halogens do not occur free in nature.

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41. Give reasons.

Alkali and alkaline earth metal compounds usually form electrovalent compounds.

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42. Give reasons.

Inert gases do not form compounds

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43. Arrange the following:

Elements of group 1, in increasing order of reactivity.

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44. Arrange the following:

Elements of group 17, in decreasing order of reactivity.

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45. Arrange the following:

He, Na, Mg (increasing order of melting point).

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46. Arrange the following:

Chlorine, sodium, magnesium (increasing reducing character).

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47. State the nature of compounds formed when group 17 elements combine with (i) metals (ii) non-metals.

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48. Why group 17 elements are highly reactive ?

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49. How many electrons do inert gases have in their valence shells ?

 Watch Video Solution

50. Name an element of group 18 which can form compounds.

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51. Name the gas used in :

filling balloons

 Watch Video Solution

52. Name the gas used in :

light bulbs

Watch Video Solution

53. Name the gas used in :

bright coloured advertising light works

Watch Video Solution

54. Why group 17 elements are called halogens?

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55. Comment on the (i) reactivity (ii) colour and (iii) physical state of group 17 elements.

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56. Two elements 'P' and 'Q' belong to the same period of the modern periodic table and are in group 1 and group 2 respectively. Compare the following characteristics in tabular form.

number of electrons in their valence shell.

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57. Tow elelments 'I' and 'Q' belong to the same periiod of the modern periodic table and

are in Group-1 and Group-2 respectively. Compare their following characteristics in tabular from:

(a) The number of electrons in their atoms

(b) The sizes of their atoms

(c) Their matallic characters

(d) Their tendencies to loes electrons

(e)The formula of their oxides

(f) The fornula of their chlorides

58. Tow elelments 'I' and 'Q' belong to the same periiod of the modern periodic table and are in Group-1 and Group-2 respectively. Compare their following characteristics in tabular from:

(a) The number of electrons in their atoms

(b) The sizes of their atoms

(c) Their matallic characters

(d) Their tendencies to loes electrons

(e)The formula of their oxides

(f) The fornula of their chlorides

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59. Tow elelments 'I' and 'Q' belong to the same periiod of the modern periodic table and are in Group-1 and Group-2 respectively. Compare their following characteristics in tabular from:

(a) The number of electrons in their atoms

(b) The sizes of their atoms

(c) Their matallic characters

(d) Their tendencies to loes electrons

(e)The formula of their oxides

(f) The fornula of their chlorides

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60. Tow elelments 'I' and 'Q' belong to the same periiod of the modern periodic table and are in Group-1 and Group-2 respectively. Compare their following characteristics in tabular from:

(a) The number of electrons in their atoms

(b) The sizes of their atoms

(c) Their matallic characters

(d) Their tendencies to loes electrons

(e)The formula of their oxides

(f) The fornula of their chlorides

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Topic 1 Modern Periodic Table And Its Periodicity 1 Mark Questions

1. The longest period of periodic table has ____ elements [36/32]

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2. In the periodic table, the vertical columns are called _____ (periods/groups)

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3. Group II metals are called _____ metals. (alkali/alkaline earth).

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4. Properties of the elements are a periodic function of their _____ . (atomic number/ mass number/relative atomic mass)

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5. Elements in the first period have valence electrons in

A. N shell

B. K shell

C. M shell

D. S shell

Answer: B

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6. The pair of elements showing diagonal relationship are:

A. Li & Be

B. B & Be

C. Na & B

D. Li & Mg

Answer: D

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7. What are those elements which belong to Groups 1,2, 13, 14, 15, 16, 17.

A. Typical elements.

B. Representative elements

C. Bridge elements.

D. Transition elements

Answer: B

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8. The correct order of reactivity in alkali metals is:

A. $Li > Na > K$

B. $Na > Li > K$

C. $K > Li > Na$

D. $K > Na > Li$

Answer: D

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9. Properties of eka aluminium matches well with:

A. Sodium

B. Potassium

C. Magnesium

D. Gallium

Answer: D

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10. The number of elements and no. of shells in third period is respectively.

A. 18,3

B. 8,3

C. 18,4

D. 8,2

Answer: B

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11. The typical elements in periodic table are

A. Na,Mg,Al

B. F,Cl,Br

C. Li,Ma,K

D. Be,Mg,Ca

Answer: A

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12. Chlorine lies in which period and group of the periodic table:

A. 3^{rd} period and 7^{th} group

B. 3^{rd} period and 8^{th} group

C. 4^{rd} period and 7^{th} group

D. 2^{rd} period and 7^{th} group

Answer: A

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13. The correct order of size of atoms is

A. $N > O > F$

B. $F > N > O$

C. $N > F > O$

D. $F > O > N$

Answer: A

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14. What was the basis of the earliest attempts made for classification and grouping of elements ?

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15. State Mendeleev.s periodic law.

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16. Which group of elements was missing from Mendeleev's original periodic table ?

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17. From the standpoint of atomic structure, what determines which element will be the first and which the last in a period of the periodic table?

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18. How do atomic structures (electron arrangement) change in a period with increase in atomic numbers, moving left to right?

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19. What happens to number of valence electrons in atoms of elements as we go down a group of the periodic table ?

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20. Give reason : Metals form positive ions.

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21. A part of the periodic table is shown below with one element missing:

H							He
Li	Be	B	C	N	O	F	Ne
Na	Mg	Al	Si	-	S	Cl	Ar
K	Ca						

Based on the above table, answer the

following question:

Identify the missing element.

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22. Give reasons for the following

Hydrogen is kept in I A group of the periodic table.

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23. Provide reason for each of the following:

Discarding the law of triad.

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24. Name the first and last alkali metals

Watch Video Solution

25. Define the following: Atomic number

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Topic 1 Modern Periodic Table And Its Periodicity 2 Marks Questions

1. Why did Mendeleev left gaps in his periodic table ?

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2. Three elements of Dobereiner.s triad are X, Y & Z. If the atomic mass of X is 7 and Z is 39,Calculate the atomic mass of Y.

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3. Provide reason for each of the following: Discarding the law of triad.

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4. Did Dobereiner's triads also exist in the columns of Newlands' octaves ? Compare and find out.

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5. Predict the formula of hydrides of carbon and silicon using Mendeleev's periodic table.

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6. The atomic number of an element is more important to the chemist than its relative atomic mass. Why ?

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7. Consider the following elements: Be, Li, Na, Ca,K. Name the elements of same group .

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8. Consider the following elements: Be, Li, Na, Ca,K. Name the elements of same period.

Watch Video Solution

9. State modern periodic law of classification of elements.

Watch Video Solution

10. How many periods and groups are there in the modern periodic table ?

Watch Video Solution

11. What is the main characteristic of the last elements in the periods of a periodic table? What is the general name of such elements ?

Watch Video Solution

12. What is meant by a group in the periodic table?

Watch Video Solution

13. What is meant in the periodic table by a period ?

Watch Video Solution

14. What is the number of elements in the 1^{st} period of the modern periodic table ?

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15. What is the number of elements in the 3^{rd} period of the modern periodic table ?

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16. Sodium and aluminium have atomic numbers 11 and 13, respectively. They are separated by one element in the periodic table, and have valencies 1 and 3 respectively. Chlorine and potassium are also separated by one element in the periodic table (their atomic numbers being 17 and 19, respectively) and yet both have valency 1. Explain.

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17. Within a group where would you expect to find the element with

(A) the greatest metallic character?

(B) the largest atomic size?

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18. Mention the part of group where the elements show: Big atomic size

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19. The electronic configuration of element is

$_{35}^{17}T$ is 2,8,7

Is it a metal or a non-metal ?

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20. Write electronic configuration of element

$_{17}^{35}T$.

State number of protons and neutrons in T.

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21. Complete the table :

Element	Electronic Configuration
Sulphur	
Fluorine	

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22. Complete the table :

Element	Electronic Configuration
	2,8,1
	2,8,8;1

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23. Identify the following on the basis of given atomic numbers:

19,15,14,8,4

Gas with valency of 2.

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24. Identify the following on the basis of given atomic numbers:

19,15,14,8,4

Metal with valency of 1.

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25. Identify the following on the basis of given atomic numbers:

19,15,14,8,4

Non-metal (solid) with valency of 3

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26. Identify the following on the basis of given atomic numbers:

19,15,14,8,4

Metalloid with valency of 4

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27. Write the hydrides of Lithium and Beryllium

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28. What is the common name of the groups given below.

A. Group 2

B. Group 17

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29. Arrange the following elements Li, B, O, Be, N,F in the order of decreasing atomic size.

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30. Arrange the following elements Li, B, O, Be, N,F in the order of metallic character.

Watch Video Solution

31. Name or state with reference to the elements of the modern periodic table.

The noble gas having duplet arrangement of electrons.

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32. With reference of first three periods of the periodic table.

Metalloid in 3rd period

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33. With reference of first three periods of the periodic table.

Valency of elements in group 17

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34. With reference of first three periods of the periodic table.

Noble gas with electronic configuration of 2,8 .

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35. What is the total number of elements in the I group of the modern periodic table

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36. What is the total number of elements in the II group of the modern periodic table

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37. What is the total number of elements in the III group of the modern periodic table

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38. Name two elements of group II

Watch Video Solution

39. State variation in number of shells in Period

Watch Video Solution

40. State variation in number of shells in Group

Watch Video Solution

41. Compare and contrast the arrangement of elements in Mendeléev's Periodic Table and the Modern Periodic Table.

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42. An element has electronic configuration

2,8,7

What is the valency of this element.

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43. An element has electronic configuration

2,8,7

The element will show resemblance with which of the following elements ?

N(7), F(9), P(15), Ar(18), Ca(20)

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44. What is new notation used instead of old notation for group given below (i) III A (ii) III B

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45. Identify the common name of group of elements based on following facts: Elements with one electron less in their valence shell to complete their octet.

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46. Identify the common name of group of elements based on following facts: Radioactive elements

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47. Identify the common name of group of elements based on following facts: Elements with 2 electrons in the valence shell

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48. Identify the common name of group of elements based on following facts: Zero group elements

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49. Why group 17 elements are highly reactive ?

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50. What is nature of compounds formed when group 17 elements react with metals ?

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Topic 1 Modern Periodic Table And Its Periodicity 3 Marks Questions

1. What is the need for classification of elements ?

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2. Use Mendeleev.s periodic Law to predict the formula of Oxides of potassium, aluminium and barium.

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3. State the merits of Mendeleev's classification of elements.

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4. State the merits of Mendeleev's classification of elements.

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5. Name the element whose properties can be predicted on the basis of its position in the periodic table given by Mendeleev's.

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6. Name two elements whose atomic weights were corrected on the basis of their positions in Mendeleev's periodic table.

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7. How many elements were known at the time of Mendeleev's classification of elements ?

8. What are the groups known as ?

Group 1

9. What are the groups known as ?

Group 17

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10. What are the groups known as ?

Group 18

Watch Video Solution

11. Name any one element of each group.

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12. How does number of Valence electrons on moving from left to right

In the second period of a periodic table

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13. How does number of valency vary on moving from left to right

In the second period of a periodic table

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14. How does number of Valence electrons on moving from left to right

In the third period of a periodic table

Watch Video Solution

15. How does number of valency vary on moving from left to right

In the third period of a periodic table

Watch Video Solution

16. What is meant by a group in the periodic table?

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17. Explain why the elements of the same group exhibit the same chemical behaviour.

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18. In which Group the inert gases are placed in the periodic table ?

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19. A part of the periodic table is shown below with one element missing :

H							He
Li	Be	B	C	N	O	F	Ne
Na	Mg	Al	Si	-	S	Cl	Ar
K	Ca						

Based on the above table , answer the

following questions :

Name the element that has duplet structure.

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20. A part of the periodic table is shown below with one element missing :

H							He
Li	Be	B	C	N	O	F	Ne
Na	Mg	Al	Si	-	S	Cl	Ar
K	Ca						

Based on the above table , answer the following questions :

Name the lightest alkali metal.

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21. A part of the periodic table is shown below with one element missing :

H							He
Li	Be	B	C	N	O	F	Ne
Na	Mg	Al	Si	-	S	Cl	Ar
K	Ca						

Based on the above table , answer the following questions :

Name the halogen of period 2.

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22. Name the element whose properties can be predicted on the basis of its position in the periodic table given by Mendeleev's.

 Watch Video Solution

23. (a) What was the basis of Mendeleev's Classification of elements ?

(b) List two achievements of Mendeleev's periodic tables.

(c) List any two observations which posed a challenge to Mendeleev's periodic law.

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24. Predict the formula of hydrides of carbon and silicon using Mendeleev's periodic table.

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25. Write three similarities between hydrogen & alkali metals.

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26. In the table given below, fill the vacant places.

Elements	Hydrides	Oxides
N	NH_3	
Al		Al_2O_3
C		CO_2

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27. The elements given below are arranged in order of increasing atomic masses.

F, Na, Mg, Al, Si, P, S, Cl, Ar, K

Pick two sets of elements which shows similar behaviour

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28. The elements given below are arranged in order of increasing atomic masses.

F, Na, Mg, Al, Si, P, S, Cl, Ar, K

This arrangement of elements is an illustrator of which law of classification of elements.

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29. What is the total no. of elements in shortest period of modern periodic table

Watch Video Solution

30. What is the number of elements in:

1. 1^{st} period and

2. 2^{nd} period of modern periodic table.

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31. Three elements of Dobereiner.s triad are X, Y & Z. If the atomic mass of X is 7 and Z is 39,Calculate the atomic mass of Y.

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32. Who proposed that atomic number is the fundamental property of an element?

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33. Newland's law of octaves states that

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Topic 1 Modern Periodic Table And Its Periodicity 5 Marks Questions

1. Lithium , sodium and potassium elements were put in one group on the basis of their similar properties. What are those similar properties ?

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2. The elements calcium, strontium and barium were put in one group or family on the basis of their similar properties . Which were those similar properties ?

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3. State any two points of Mendeleev.s basis for classification of elements ?

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4. Mendeleev's contributions to the concept of periodic table laid the foundation for the Modern Periodic Table. Justify your answer giving three points.

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5. This question refers to elements of the periodic table with atomic numbers from 3 to 18. In the table below, some elements are

shown by letters, even though the letters are not the usual symbols of the elements.

3	4	5	6	7	8	9	10
A	B	C	D	E	F	G	H
11	12	13	14	15	116	17	18
I	J	K	L	M	N	O	P

Which of these is a noble gas

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6. This question refers to elements of the periodic table with atomic numbers from 3 to 18. In the table below, some elements are shown by letters, even though the letters are

not the usual symbols of the elements.

3	4	5	6	7	8	9	10
A	B	C	D	E	F	G	H
11	12	13	14	15	116	17	18
I	J	K	L	M	N	O	P

Which of these is a halogen

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7. This question refers to elements of the periodic table with atomic numbers from 3 to 18. In the table below, some elements are shown by letters, even though the letters are not the usual symbols of the elements.

3	4	5	6	7	8	9	10
A	B	C	D	E	F	G	H
11	12	13	14	15	116	17	18
I	J	K	L	M	N	O	P

Which of these is an alkali metal

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8. This question refers to elements of the periodic table with atomic numbers from 3 to 18. In the table below, some elements are shown by letters, even though the letters are not the usual symbols of the elements.

3	4	5	6	7	8	9	10
A	B	C	D	E	F	G	H
11	12	13	14	15	116	17	18
I	J	K	L	M	N	O	P

Which of these is an element with valency 4.

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9. This question refers to elements of the periodic table with atomic numbers from 3 to 18. In the table below, some elements are shown by letters, even though the letters are not the usual symbols of the elements.

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

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10. This question refers to elements of the periodic table with atomic numbers from 3 to 18. In the table below, some elements are shown by letters, even though the letters are not the usual symbols of the elements. 

What is the electronic configuration of G?

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11. Helium is an unreactive gas and neon has very poor reactivity. What do these elements have in common?

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12. The position of elements A,B,C,D and E in the periodic table are shown below :

Group 1	Group 2	Group 17	Group 18
-	-	-	D
-	B	C	-
A	-	-	E

State which are metals, non-metals and noble gas in this table.

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13. The position of elements A,B,C,D and E in the periodic table are shown below :

Group 1	Group 2	Group 17	Group 18
-	-	-	D
-	B	C	-
A	-	-	E

State which is the most reactive (i) metal (ii) non metal .

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14. The position of elements A,B,C,D and E in the periodic table are shown below :

Group 1	Group 2	Group 17	Group 18
-	-	-	D
-	B	C	-
A	-	-	E

Which type of ion will be formed by element A, B and C.

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15. The position of elements A,B,C,D and E in the periodic table are shown below :

Group 1	Group 2	Group 17	Group 18
-	-	-	D
-	B	C	-
A	-	-	E

Which is larger in size (i) D or E (ii) B or C.

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16. Write electronic configuration of element ${}_{17}^{35}T$.

What is the group number of T?

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17. Write electronic configuration of element

$_{17}^{35}T$.

What is the period number of T ?

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18. Write electronic configuration of element

$_{17}^{35}T$.

How many valence electrons are there in an atom of T?

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19. Write electronic configuration of element ${}_{17}^{35}T$.

What is the valency of T ?

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20. Mention the part of group where the elements show: Highest metallic character

21. Mention the part of group where the elements show: Big atomic size

22. How valency of elements changes : Along the period from left to right

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23. How valency of elements changes : Down the group from top the bottom

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24. Name the metalloid present in second period

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25. For elements ${}^{39}_{19}X$

Write electronic configuration

Watch Video Solution

26. For elements ${}^{39}_{19}X$

What is the group number

Watch Video Solution

27. For elements ${}^{39}_{19}X$

What is the period number

Watch Video Solution

28. For elements ${}_{19}^{39}X$

Number of valence electrons

Watch Video Solution

29. For elements ${}_{19}^{39}X$

Valency of X

Watch Video Solution

30. An elements P has atomic no. 13.

Write its electronic configuration

Watch Video Solution

31. An elements P has atomic no. 13.

State the group to which it belongs.

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32. An elements P has atomic no. 13.

Elements P is metal or non-metal ?

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33. An elements P has atomic no. 13.

Write the formula of its oxide

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34. Name the scientist who proposed modern periodic law

Watch Video Solution

35. Name first element of period 7

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36. As we move down the group, the atomic size increases or decreases ?

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37. What is the common feature of the electronic configurations of the elements in group 17[VIIA]

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38. Properties of eka silicon resembles with which element ?

Watch Video Solution

39. Beryllium exhibits diagonal relationship with ..... (magnesium / aluminium).

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40. Elements W, X, Y, Z in the periodic table are shown below:

Group 1	Group 2
Z	-
-	X
-	-
W	Y

State whether Z is metal or non-metal

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41. Elements W, X, Y, Z in the periodic table are shown below:

Group 1	Group 2
Z	-
-	X
-	-
W	Y

State whether W is smaller or larger than Z in size

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42. Elements W, X, Y, Z in the periodic table are shown below:

Group 1	Group 2
Z	-
-	X
-	-
W	Y

State whether Y is smaller or larger than W

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43. Elements W, X, Y, Z in the periodic table are shown below:

Group 1	Group 2
Z	-
-	X
-	-
W	Y

Identify what type of anion or cation will be formed by Z and X

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44. Elements W, X, Y, Z in the periodic table are shown below:

Group 1	Group 2
Z	-
-	X
-	-
W	Y

If Z is the third element of first group, identify the element and what would be the colour imparted by Z during the flame test.

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Topic 2 Studying Individual Groups 1 Mark Questions

1. Relative atomic mass of a light element up to calcium is approximately ..... its atomic number.

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2. Horizontal rows of periodic table are called

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3. Going across a period left to right, atomic size .....

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4. Moving left to right in the second period, number of valence electrons ..... [increases from 1 to 4/ increases from 1 to 7]

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5. Moving down in the second group, number of valence electrons .....

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6. Match the Column A with Column B

Column A	Column B
(a) Elements short by 1 electron in octet	(i) Transition elements
(b) Highly reactive metals	(ii) Noble gases
(c) Non-reactive elements	(iii) Alkali metals
(d) Elements of groups 3 to 12	(iv) Alkaline earth metals
(e) Radioactive elements	(v) Halogens
(f) Elements with 2 electrons in the ourtmost orbit.	(vi) Actinides

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7. Match Column A with Column B.

Column A	Column B
(i) Liquid metal	A. Bromine
(ii) An element without neutron	B. Mercury
(iii) An oxidizing agent	C. Helium
(iv) A liquid non metal	D. Hydrogen
(v) An inert gas	E. Oxygen

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8. An element A has 2 electrons in its, fourth shell. State its atomic number

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9. An element A has 2 electrons in its, fourth shell. State its electronic configuration

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10. An element A has 2 electrons in its, fourth shell. State its valency

Watch Video Solution

11. An element A has 2 electrons in its, fourth shell. State position in the periodic table

Watch Video Solution

12. An element A has 2 electrons in its, fourth shell. State is it a metal or a non-metal

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13. An element A has 2 electrons in its, fourth shell. State is it an oxidizing or reducing agent ?

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14. Give reasons: Argon is used to fill light bulbs.

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15. Give reasons for each of the following:

Noble gases do not form compounds readily.

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Topic 2 Studying Individual Groups 2 Marks Questions

1. How do alkaline earth metals occur in nature

?

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2. Write the electronic configuration of the first two alkaline earth metals.

Watch Video Solution

3. Name or state the following with reference to the element of the first three periods of the periodic table.

Typical elements of Groups 14 and 15.

Watch Video Solution

4. Name or state the following with reference to the element of the first three periods of the periodic table.

Alkaline earth metal in Period 3.

Watch Video Solution

5. Complete the table :

Atomic No	Element	Electronic configuration	Select element of the same group
11	Sodium		(Ca/N/K....)
15	Phosphorus		(Al/N/C....)

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6. Complete the table :

Atomic No.	Element	Electronic configuration	Select element of the same group
		2,8,6	O
		2, 7	Cl

Watch Video Solution

7. Name the method by which alkali metals can be extracted.

Watch Video Solution

8. What is the colour of the flame of sodium and potassium ?

9. How many electrons do inert gases have in their valence shells ?

10. Name an element of group 18 which can form compounds.

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11. Why group 17 elements are called halogens?

Watch Video Solution

12. Give use of Helium gas

Watch Video Solution

13. Give use of neon gas

Watch Video Solution

14. The table given below shows the position of element U, V, X, Y and Z.

Group 1	Group 2	Group 17	Group 18
-	-	-	Y
-	V	X	-
U	-	-	Z

Which is larger in size Y or Z

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15. The table given below shows the position of element U, V, X, Y and Z.

Group 1	Group 2	Group 17	Group 18
-	-	-	Y
-	V	X	-
U	-	-	Z

Which is larger in size V or X

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16. What is the action of air on (i)Alkali metals (ii) Provide chemical reaction equation to prove your answer.

Watch Video Solution

17. Below are some elements of modern periodic table

$_4Be, _9F, _{14}Si, _{19}K, _{20}Ca$

Select the element which has one electron in its outermost shell

Watch Video Solution

18. Below are some elements of modern periodic table

$_4Be, _9F, _{14}Si, _{19}K, _{20}Ca$

Select two elements which belong to same group

Watch Video Solution

19. Below are some elements of modern periodic table

$_4Be, _9F, _{14}Si, _{19}K, _{20}Ca$

Select two elements which belong to same period

Watch Video Solution

20. Below are some elements of modern periodic table

$_4Be, _9F, _{14}Si, _{19}K, _{20}Ca$

Identify the element that belong to halogen family

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21. Write the name of two elements in group I.

 Watch Video Solution

22. Write the chemical reaction to show formation of hydrides and oxides with any element of group I.

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23. State two properties of group I elements.

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Topic 2 Studying Individual Groups 3 Marks Questions

1. Element P has atomic number 19. To which group and period does P belong? It is a metal or a non metal ? Why?

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2. An element belongs to the third period and Group III A (13) of the periodic table. State the number of valence electrons

Watch Video Solution

3. An element belongs to the third period and Group III A (13) of the periodic table. State the valency

Watch Video Solution

4. An element belongs to the third period and Group III A (13) of the periodic table. State if it is a metal or non-metal

Watch Video Solution

5. An element belongs to the third period and Group III A (13) of the periodic table. State the name of the element

Watch Video Solution

6. What is nature of compounds formed when group 17 elements react with metals ?

Watch Video Solution

7. State the nature of compounds formed when group 17 elements combine with non-metals

Watch Video Solution

8. Why group 17 elements are highly reactive ?

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9. Comment on the reactivity of group 17 elements.

Watch Video Solution

10. Comment on the colour of group 17 elements.

Watch Video Solution

11. Comment on the physical state of group 17 elements.

Watch Video Solution

12. The table given below shows the position of element U, V, X, Y and Z

Group 1	Group 2	Group 17	Group 18
-	-	-	Y
-	V	X	-
U	-	-	Z

Which ions are formed by elements U and X.

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13. The table given below shows the position of element U, V, X, Y and Z

Group 1	Group 2	Group 17	Group 18
-	-	-	Y
-	V	X	-
U	-	-	Z

What type of compound is formed by U and X.

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14. Name the method used for extraction of alkali metals

 Watch Video Solution

15. Name first three alkali metals

 Watch Video Solution

16. Lithium compounds impart .....colour to the flame.

 Watch Video Solution

17. Find the name of elements based on the electronic configuration : 2,8,4

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18. Find the name of elements based on the electronic configuration : 2,8,7

Watch Video Solution

19. Find the name of elements based on the electronic configuration : 2,8,8,1

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20. Write one main characteristic of p-block elements or representative elements?

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21. Write one main characteristic of d-block elements or transition elements

Watch Video Solution

22. Write one main characteristic of f-block elements or inner transition elements

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23. Which element has twice as many electrons in its second shell as in the first shell?

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24. Which element has 3 shells in total with eight electrons in its valence shell

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25. Name an element that has two shells each one of which is completely filled with electrons.

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Topic 2 Studying Individual Groups 5 Marks Questions

1. Name the alkali metals. How many electrons(s) do they have in their outermost orbit.

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2. Take any one alkali metal and write its reaction with Oxygen

Watch Video Solution

3. Take any one alkali metal and write its reaction with Water

Watch Video Solution

4. Take any one alkali metal and write its reaction with Acid

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5. Name or state the following with reference to the elements of the first three periods of the periodic table.

Noble gas with duplet arrangement of electrons.

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6. Name or state the following with reference to the element of the first three periods of the periodic table.

Metalloid in Period 3.

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7. Name or state the following with reference to the elements of the first three periods of the periodic table.

Valency of elements in Group 14 and 15.

Watch Video Solution

8. Name or state the following with reference to the elements of the first three periods of the periodic table.

Noble gas having electronic configuration : 2, 8, 8.

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9. Name or state the following with reference to the element of the first three periods of the

periodic table.

Group whose elements have zero valency.

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10. Name or state the following with reference to the elements of the first three periods of the periodic table.

A covalent compound formed by an element in Perid 2 and a halogen.

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11. Name or state the following with reference to the element of the first three periods of the periodic table.

Non-metallic element present in Period 3 of Groups 15 and 16.

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12. Name or state the following with reference to the elements of the first three periods of the periodic table.

An electrovalent compound formed by an alkalin earth metal and a halogen.

Watch Video Solution

13. Name or state the following with reference to the elements of the first three periods of the periodic table.

Bridge elements of Period 3 of Group 1, 2 and 3.

Watch Video Solution

14. Name or state the following with reference to the elements of the first three periods of the periodic table.

Alkali metal in Period 3 that dissolves in water giving a strong alkali.

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15. (a)Name the first three alkaline earth metals.

(b) Write their reactions with dil hydrochloric acid.

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16. The table given below shows the position of element U, V, X, Y and Z

Group 1	Group 2	Group 17	Group 18
-	-	-	Y
-	V	X	-
U	-	-	Z

Identify metals, non-metals and noble gases

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17. The table given below shows the position of element U, V, X, Y and Z

Group 1	Group 2	Group 17	Group 18
-	-	-	Y
-	V	X	-
U	-	-	Z

Identify most reactive metal and non-metal

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18. In the table given below, six elements are shown with their atomic numbers given in parenthesis.

Period	Group 1	Group 2
2	A (3)	D (4)
3	B (11)	E (12)
4	C (19)	F (20)

What is electronic configuration of element C.

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19. In the table given below, six elements are shown with their atomic numbers given in parenthesis.

Period	Group 1	Group 2
2	A (3)	D (4)
3	B (11)	E (12)
4	C (19)	F (20)

Number of shells in atom E.

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20. In the table given below, six elements are shown with their atomic numbers given in parenthesis.

Period	Group 1	Group 2
2	A (3)	D (4)
3	B (11)	E (12)
4	C (19)	F (20)

Number of valence electrons in atom A.

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21. In the table given below, six elements are shown with their atomic numbers given in parenthesis.

Period	Group 1	Group 2
2	A (3)	D (4)
3	B (11)	E (12)
4	C (19)	F (20)

State whether element B is non-metal or metal.

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22. In the table given below, six elements are shown with their atomic numbers given in parenthesis.

Period	Group 1	Group 2
2	A (3)	D (4)
3	B (11)	E (12)
4	C (19)	F (20)

Among elements A, B, C, which one has largest atomic size.

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23. Complete the following table :

Element	Group No.	Formula of oxide	Formula of hydrides
Na	1		NaH
C	4	CO_2	
N	3		NH_3
As	3		AsH_3

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24. An element with atomic number 5 belongs to III A group of the modern periodic table . Find Oxide of element .

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25. An element with atomic number 5 belongs to III A group of the modern periodic table. Find the number of valence electrons

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26. An element with atomic number 5 belongs to III A group of the modern periodic table. Find Valency

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27. An element with atomic number 5 belongs to III A group of the modern periodic table. Find Metal or non-metal or metalloid

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28. An element with atomic number 5 belongs to III A group of the modern periodic table. Find Name of the element

Watch Video Solution

29. An element with atomic number 5 belongs to III A group of the modern periodic table. Find Hydride of element

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30. From the standpoint of atomic structure, what determines which element will be the first and which the last in a period of the periodic table?

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31. How does valency and valence electrons vary on moving from left to right in II period

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32. Name the following:

An alkaline earth metal in period 3 of the periodic table.

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33. The elements of the third period of the Periodic Table are given below:

Group → / Period ↓	I	II	III	IV	V	VI	VII
3	Na	Mg	Al	Si	P	S	Cl

(a) Which atom is bigger, Na or Mg? Why?

(b) Identify the most (i) metallic and (ii) non-metallic element in Period 3.

(c) Which is more non-metallic, S or Cl?

(d) Which has higher atomic mass, Al or Cl?

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34. Metalloid in 3rd period.

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