



CHEMISTRY

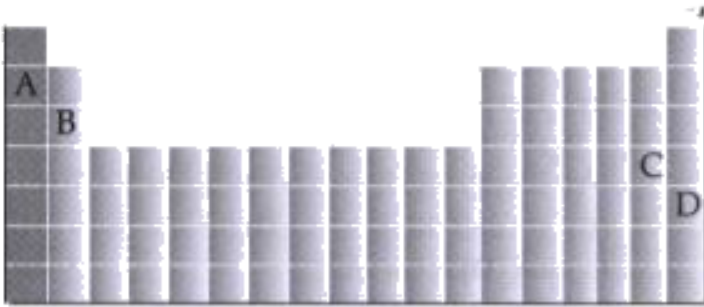
BOOKS - OSWAL PUBLICATION

PERIODIC CLASSIFICATION OF ELEMENTS

Stand Alone Mcqs

1. The positions of four elements A, B, C and D in the modern periodic table are shown below.

Which element is most likely to form an acidic oxide?



A. A

B. B

C. C

D. D

Answer: C





2. Elements P, Q, R and S have atomic numbers 11, 15, 17 and 18 respectively. Which of them are reactive non-metals?

A. P and Q

B. P and R

C. Q and R

D. R and S

Answer: C



3. Consider the following statements about an element 'X' with number of protons 13.

(A) It forms amphoteric oxide.

(B) Its valency is three.

(C) The formula of its chloride is XCl.

(D) The correct statements(s) is/are:

A. only (A)

B. only (B)

C. (A) and (C)

D. (A) , (B) and (C)

Answer: A::B::D



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4. Upto which element, the Law of Octaves was found to be applicable ?

A. Oxygen

B. Calcium

C. Cobalt

D. Potassium

Answer: B



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5. According to Mendeleev' periodic law, the elements were arranged in the periodic table in the order of

A. increasing atomic number

B. decreasing atomic number

C. increasing atomic masses

D. decreasing atomic masses

Answer: C



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6. Which of the following is not a merit of Mendeleev's periodic table?

A. Germanium

B. Chlorine

C. Oxygen

D. Silicon

Answer: A



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7. What type of oxide would Eka-aluminium form ?

A. EO_3

B. E_2O_2

C. E_2O_3

D. EO

Answer: C



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8. Which of these does not represent Dobereiner's triad?

A. Li, Na, K

B. Cl, Br, I

C. Be, Mg, Ca

D. NP As

Answer: D



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9. An element 'X' is forming an acidic oxide. Its position in modern periodic table will be:

A. Group 1 and Period 3

B. Group 2 and Period 3

C. Group 13 and Period 3

D. Group 16 and Period 3

Answer: D



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10. Where would you locate the element with electronic configuration 2,8 in the modern periodic table ?

A. Group 8

B. Group 2

C. Group 18

D. Group 10

Answer: C



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11. Which of the following is the outermost shell for elements of period 2 ?

A. K shell

B. L shell

C. M shell

D. N shell

Answer: B



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12. Arrange the following elements in the order of their decreasing metallic character Na, Si, Cl, Mg, Al.

A. $Cl > Si > Al > Mg > Na$

B. $Na > Mg > Al > Si > Cl$

C. $Na > Al > Mg > Cl > Si$

D. $Al > Na > Si > Ca > Mg$

Answer: B



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13. Which of the following elements will form an acidic oxide ?

- A. An element with atomic number 7
- B. An element with atomic number 3
- C. An element with atomic number 12
- D. An element with atomic number 19

Answer: A



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14. Which of the following set of elements is written in order of their increasing metallic character ?

A. Be, Mg, Ca

B. Na, Li, K

C. Mg, Al, Si

D. C, O, N A

Answer: A



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15. Which of the following are the characteristics of isotopes of an element?

(i) Isotopes of an element have same atomic

masses.

(ii) Isotopes of an element have same atomic number

(iii) Isotopes of an element show same physical properties.

(iv) Isotopes of an element show same chemical properties.

A. (i), (iii) and (iv)

B. (i), (ii) and (iv)

C. (i) and (ii) (iii)

D. (ii) and (iv)

Answer: D



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16. 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

B. The number of valence electrons increases

C. The atoms lose their electrons more easily

D. The oxides become more acidic.

Answer: C



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Assertion And Reason Based Mcqs

1. Assertion (A): Mendeleev arranged element in horizontal rows and vertical columns.

Reason (R): Mendeleev ignored the order of atomic weight thinking that the atomic measurements might be incorrect.

A. Both A and R are true and R is the correct explanation of A.

B. Both A and R are true but R is NOT the correct explanation of A.

C. A is true but R is false.

D. A is false and R is true.

Answer: A





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2. Assertion (A): Mendeleev left the gap under aluminium and silicon and called these Eka-aluminium and Eka-silicon, respectively.

Reason (R): Dobereiner arranged elements on the basis of increasing atomic number.

A. Both A and R are true and R is the correct explanation of A.

B. Both A and R are true but R is NOT the correct explanation of A.

C. A is true but R is false.

D. A is false and R is true.

Answer: C



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3. Assertion (A): In triad, the three elements have same gaps of atomic masses. ,br> **Reason (R):** Elements in a triad have similar properties.

A. Both A and R are true and R is the correct explanation of A.

B. Both A and R are true but R is NOT the correct explanation of A.

C. A is true but R is false.

D. A is false and R is true.

Answer: D



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4. Assertion (A): According to Mendeleev, periodic properties of elements is a function of their atomic number.

Reason (R): Atomic number is equal to the number of protons.

A. Both A and R are true and R is the correct explanation of A.

B. Both A and R are true but R is NOT the correct explanation of A.

C. A is true but R is false.

D. A is false and R is true.

Answer: D



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5. Assertion (A): Sixth and seventh periods in the periodic table contains 14 elements.

Reason (R): In the periodic table, 14 elements of sixth and seventh periods are known as lanthanoids and actinoids.

A. Both A and R are true and R is the correct explanation of A.

B. Both A and R are true but R is NOT the correct explanation of A.

C. A is true but R is false.

D. A is false and R is true.

Answer: D



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6. Directions : In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as :

Assertion (A) : Be and Al show some similar properties.

Reason (R) : The metallic radius of Be is less than the metallic radius of Al.

A. Both A and R are true and R is the correct explanation of A.

B. Both A and R are true but R is NOT the correct explanation of A.

C. A is true but R is false.

D. A is false and R is true.

Answer: B



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7. Assertion (A): The atomic and ionic radii generally decrease towards right in a period.

Reason (R): The ionisation enthalpy increases on moving towards left in a period.

A. Both A and R are true and R is the correct explanation of A.

B. Both A and R are true but R is NOT the correct explanation of A.

C. A is true but R is false.

D. A is false and R is true.

Answer: C



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8. Directions : In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as :

Assertion (A) : Smaller the size of an atom, greater is the electronegativity.

Reason (R) : Electronegativity refers to the tendency of atom to share electrons with other atom.

A. Both A and R are true and R is the correct explanation of A.

B. Both A and R are true but R is NOT the correct explanation of A.

C. A is true but R is false.

D. A is false and R is true.

Answer: C



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9. Assertion (A): Noble gases are highly reactive.

Reason (R): Noble gases have stable closed shell electronic configuration.

A. Both A and R are true and R is the correct explanation of A.

B. Both A and R are true but R is NOT the correct explanation of A.

C. A is true but R is false.

D. A is false and R is true.

Answer: D



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Case Based Mcqs

1. Mendeleev was a Russian chemist, who contributed the most for the development of periodic table of elements wherein the elements were arranged on the basis of their fundamental property, the atomic mass and also on the similarity of chemical properties.

Only 63 elements were known at his time. He arranged the 63 elements in the increasing order of their atomic masses and found that there was a periodic recurrence of elements with similar physical and chemical properties, He observed that elements with similar properties fall in the same vertical column. These vertical columns are called groups and horizontal rows of elements are called periods. Mendeleev predicted the existence of certain elements not known at that time and named two of them as Eka-silicon and Eka-aluminium.

Mendeleev arranged the periodic table on the basis of their fundamental property:

- A. Atomic mass
- B. Atomic number
- C. Number of neutrons
- D. Valence electrons

Answer: A



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2. Mendeleev was a Russian chemist, who contributed the most for the development of periodic table of elements wherein the elements were arranged on the basis of their fundamental property, the atomic mass and also on the similarity of chemical properties. Only 63 elements were known at his time. He arranged the 63 elements in the increasing order of their atomic masses and found that there was a periodic recurrence of elements with similar physical and chemical properties, He observed that elements with similar

properties fall in the same vertical column. These vertical columns are called groups and horizontal rows of elements are called periods. Mendeleev predicted the existence of certain elements not known at that time and named two of them as Eka-silicon and Eka-aluminium. Eka aluminium and eka silicon were later replaced respectively as :

A. Germanium and gallium

B. Gallium and scandium

C. Gallium and germanium

D. Germanium and scandium

Answer: D



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3. Mendeleev was a Russian chemist, who contributed the most for the development of periodic table of elements wherein the elements were arranged on the basis of their fundamental property, the atomic mass and also on the similarity of chemical properties.

Only 63 elements were known at his time. He arranged the 63 elements in the increasing order of their atomic masses and found that there was a periodic recurrence of elements with similar physical and chemical properties, He observed that elements with similar properties fall in the same vertical column. These vertical columns are called groups and horizontal rows of elements are called periods. Mendeleev predicted the existence of certain elements not known at that time and named two of them as Eka-silicon and Eka-aluminium. The elements eka aluminium and eka silicon

discovered by Mendeleev later found place in periodic table. Both of these elements belong to:

- A. Period 2
- B. Group 13
- C. Group 14
- D. Period 4

Answer: D



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4. Mendeleev was a Russian chemist, who contributed the most for the development of periodic table of elements wherein the elements were arranged on the basis of their fundamental property, the atomic mass and also on the similarity of chemical properties. Only 63 elements were known at his time. He arranged the 63 elements in the increasing order of their atomic masses and found that there was a periodic recurrence of elements with similar physical and chemical properties, He observed that elements with similar

properties fall in the same vertical column.

These vertical columns are called groups and

horizontal rows of elements are called periods.

Mendeleev predicted the existence of certain

elements not known at that time and named

two of them as Eka-silicon and Eka-aluminium.

Mendeleev's periodic table has:

A. 8 groups and 7 periods

B. 7 groups and 8 periods.

C. 7 groups and 7 periods

D. 8 groups and 8 periods

Answer: A



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5. Mendeleev was a Russian chemist, who contributed the most for the development of periodic table of elements wherein the elements were arranged on the basis of their fundamental property, the atomic mass and also on the similarity of chemical properties. Only 63 elements were known at his time. He arranged the 63 elements in the increasing

order of their atomic masses and found that there was a periodic recurrence of elements with similar physical and chemical properties, He observed that elements with similar properties fall in the same vertical column. These vertical columns are called groups and horizontal rows of elements are called periods. Mendeleev predicted the existence of certain elements not known at that time and named two of them as Eka-silicon and Eka-aluminium. How do we classify these newly discovered elements (eka-aluminium and eka-silicon)?

A. Metals

B. Non metals

C. Metalloids

D. Inert gases

Answer: C



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Group → Period ↓	1	2	13	14	15	16	17	18
3	X		B	C	D	E		
4	Y							
5	Z							

6.

Which of these elements have smallest atomic size?

A. B

B. C

C. D

D. E

Answer: D



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Group → Period ↓	1	2	13	14	15	16	17	18
3	X		B	C	D	E		
4	Y							
5	Z							

7.

Write valency of element E.

A. 1

B. 3

C. 2

D. 0

Answer: C



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Group → Period ↓	1	2	13	14	15	16	17	18
3	X		B	C	D	E		
4	Y							
5	Z							

8.

Identify the elements which have similar chemical properties as the element X.

A. Y and Z

B. Y and B

C. All Y, Z and B

D. None of these

Answer: A



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Group → Period ↓	1	2	13	14	15	16	17	18
3	X		B	C	D	E		
4	Y							
5	Z							

9.

The number of period that the modern periodic table has

A. Seven

B. Eight

C. Seventeen

D. Eighteen

Answer: A



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Group → Period ↓	1	2	13	14	15	16	17	18
3	X		B	C	D	E		
4	Y							
5	Z							

10.

Which of them will have largest atomic radii:

A. E

B. X

C. C

D. D

Answer: B



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11. Atoms of eight elements A, B, C, D, E, F, G and H have the same number of electronic shells but are different in their outermost shells. It was found that elements A and G combine to form an ionic compound which can also be extracted from sea water. Oxides of the elements A and B are basic in nature while those of E and F are acidic. The oxide of elements D is almost neutral.

Which of the following is likely to be halogen?

A. D

B. G

C. H

D. A

Answer: B



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12. Atoms of eight elements A, B, C, D, E, F, G and H have the same number of electronic shells but are different in their outermost

shells. It was found that elements A and G combine to form an ionic compound which can also be extracted from sea water. Oxides of the elements A and B are basic in nature while those of E and F are acidic. The oxide of elements D is almost neutral.

Which one of the following elements is likely to be a noble gas?

A. A

B. H

C. D

D. F

Answer: B



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13. Atoms of eight elements A, B, C, D, E, F, G and H have the same number of electronic shells but are different number of electrons in their outermost shells. It was found that elements A and G combine to form an ionic compound which can also be extracted from

sea water. Oxides of the elements A and B are basic in nature while those of E and F are acidic. The oxide of elements D is almost neutral.

Which two elements amongst these are likely to be the non-metals ?

A. A and G

B. D and F

C. E and F

D. A and B

Answer: C



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14. Atoms of eight elements A, B, C, D, E, F, G and H have the same number of electronic shells but are different in their outermost shells. It was found that elements A and G combine to form an ionic compound which can also be extracted from sea water. Oxides of the elements A and B are basic in nature while those of E and F are acidic. The oxide of elements D is almost neutral.

Which one of the following will have largest atomic radii?

A. A

B. H

C. G

D. B

Answer: A



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15. Atoms of eight elements A, B, C, D, E, F, G and H have the same number of electronic shells but are different in their outermost shells. It was found that elements A and G combine to form an ionic compound which can also be extracted from sea water. Oxides of the elements A and B are basic in nature while those of E and F are acidic. The oxide of elements D is almost neutral.

To which period the listed elements belong?

A. 2nd

B. 7th

C. 8th

D. 3rd

Answer: D



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1 Lithium	2	13	14 Carbon	15	16 Oxygen	17 Fluorine
X			P			Q
Y						R
Z						T

16.

Which is the most reactive metal ?

A. Lithium

B. X

C. Y

D. Z

Answer: D



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1 Lithium	2	13	14 Carbon	15	16 Oxygen	17 Fluorine
X			P			Q
Y						R
Z						T

17.

Name the family of fluorine Q, R, T:

A. Alkali metals

B. Noble gas

C. Halogens

D. Alkaline metals

Answer: C



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1 Lithium	2	13	14 Carbon	15	16 Oxygen	17 Fluorine
X			P			Q
Y						R
Z						T

18.

Which of the following element belongs to group 2?

A. Sodium

B. Magnesium

C. Aluminium

D. Carbon

Answer: B



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1 Lithium	2	13	14 Carbon	15	16 Oxygen	17 Fluorine
X			P			Q
Y						R
Z						T

19.

Which other element is likely to present in the group in which fluorine is present:

A. Neon

B. Aluminium

C. Chlorine

D. None of the above

Answer: C



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1	2	13	14	15	16	17
Lithium			Carbon		Oxygen	Fluorine
X			P			Q
Y						R
Z						T

20.

Name the element P placed below Carbon in group 14:

A. Aluminium

B. Silicon

C. Phosphorus

D. Sulphur

Answer: B



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Self Assessment 1 Objective Type Questions

1. निम्नलिखित में से कौन - सा एक डॉबेराइनर त्रिक नहीं है ?

A. Li Na K

B. Cl Br I

C. Be Mg Ca

D. NP As

Answer:



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2. On what basis Mendeleev's classified the elements?

A. Atomic number

B. Atomic masses

C. Both (i) and (ii)

D. Groups and periods

Answer:



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3. Which of the following statements about the Modern Periodic Table is incorrect?

A. It has 18 vertical columns

B. It has 7 horizontal rows.

C. Elements of period do not have the same number of valence electrons.

D. Elements present in a group do not have the same valency.

Answer:



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4. Read the passage and answer the following questions.

Mendeleev was a Russian chemist, who contributed the most for the development of periodic table of elements wherein the elements were arranged on the basis of their fundamental property, the atomic mass and also on the similarity of chemical properties. Only 63 elements were known at his time. He arranged the 63 elements in the increasing order of their atomic masses and found that

there was a periodic recurrence of elements with similar physical and chemical properties.

He observed that elements with similar properties fall in the same vertical column.

These vertical columns are called groups and horizontal rows of elements are called periods.

Mendeleev predicted the existence of certain elements not known at that time and named two of them as Eka-silicon and Eka-aluminium.

Name the elements which have taken the place of these elements.



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5. Read the passage and answer the following questions.

Mendeleev was a Russian chemist, who contributed the most for the development of periodic table of elements wherein the elements were arranged on the basis of their fundamental property, the atomic mass and also on the similarity of chemical properties. Only 63 elements were known at his time. He arranged the 63 elements in the increasing order of their atomic masses and found that there was a periodic recurrence of elements

with similar physical and chemical properties.

He observed that elements with similar properties fall in the same vertical column.

These vertical columns are called groups and horizontal rows of elements are called periods.

Mendeleev predicted the existence of certain elements not known at that time and named two of them as Eka-silicon and Eka-aluminium.

Mention the group and the period of these elements in the modern periodic table.



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6. Read the passage and answer the following questions.

Mendeleev was a Russian chemist, who contributed the most for the development of periodic table of elements wherein the elements were arranged on the basis of their fundamental property, the atomic mass and also on the similarity of chemical properties. Only 63 elements were known at his time. He arranged the 63 elements in the increasing order of their atomic masses and found that there was a periodic recurrence of elements with similar physical and chemical properties.

He observed that elements with similar properties fall in the same vertical column.

These vertical columns are called groups and horizontal rows of elements are called periods.

Mendeleev predicted the existence of certain elements not known at that time and named two of them as Eka-silicon and Eka-aluminium.

Classify these elements as metals, non-metals and metalloids.



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7. Read the passage and answer the following questions.

Mendeleev was a Russian chemist, who contributed the most for the development of periodic table of elements wherein the elements were arranged on the basis of their fundamental property, the atomic mass and also on the similarity of chemical properties. Only 63 elements were known at his time. He arranged the 63 elements in the increasing order of their atomic masses and found that there was a periodic recurrence of elements

with similar physical and chemical properties.

He observed that elements with similar properties fall in the same vertical column.

These vertical columns are called groups and horizontal rows of elements are called periods.

Mendeleev predicted the existence of certain elements not known at that time and named two of them as Eka-silicon and Eka-aluminium.

How many valence electrons are present in each one of them?



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8. Directions: In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as :

Assertion (A) : Mendeleev' left the gap under aluminium and silicon and called these Eka-aluminium and Eka-silicon, respectively.

Reason (R) : Dobereiner arranged elements on the basis of increasing atomic number.

A. Both assertion (A) and reason (R) are true and reason (R) is the correct

explanation of assertion (A).

B. Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C. Assertion (A) is true but reason (R) is false.

D. Assertion (A) is false but reason (R) is true.

Answer:



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9. Directions: In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as :

Assertion (A) : Mendeleev's arranged element in horizontal rows and vertical columns.

Reason (R) : Mendeleev's ignored the order of atomic weight thinking that the atomic measurements might be incorrect.

A. Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

B. Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C. Assertion (A) is true but reason (R) is false.

D. Assertion (A) is false but reason (R) is true.

Answer:



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10. Why was the system of classification of elements into triads not found suitable ?



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11. Why hydrogen should be placed in group I ?



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12. Write the formula used to determine the maximum numbers of electrons which a shell in an atom can accommodate.



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13. Compare and contrast the arrangement of elements in Mendeléeev's Periodic Table and the Modern Periodic Table.



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C. C

D. D

Answer:



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2. Elements P, Q R and S have atomic numbers 11, 15, 17 and 18 respectively. Which of them are reactive non-metals?

A. P and Q

B. P and R

C. Q and R

D. R and S

Answer:



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3. Arrange the given elements in increasing order of their atomic radii? Li, Be, F and N

A. $F < N < Be < Li$

B. $Li < F < N < Be$

C. $Be < Li < F < N$

D. $N < Be < Li < F$

Answer:



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4. From the following part of the periodic table, answer the following questions :

1	2	13	14	15	16	17
Lithium			Carbon		Oxygen	Fluorine
X			P			Q
Y						R
Z						T

Which is the most reactive metal ?



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5. From the following part of the periodic table, answer the following questions :

1	2	13	14	15	16	17
Lithium			Carbon		Oxygen	Fluorine
X			P			Q
Y						R
Z						T

Name the family of fluorine Q, R, T.



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6. From the following part of the periodic table, answer the following questions :

1	2	13	14	15	16	17
Lithium			Carbon		Oxygen	Fluorine
X			P			Q
Y						R
Z						T

Name one element each of group 2 and 15.



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7. From the following part of the periodic table, answer the following questions :

1	2	13	14	15	16	17
Lithium			Carbon		Oxygen	Fluorine
X			P			Q
Y						R
Z						T

Compare X and P with respect to the size of atoms.



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8. Directions : In the following questions, a statement of assertion (A) is followed by a

statement of reason (R). Mark the correct choice as :

Assertion (A) : Be and Al show some similar properties.

Reason (R) : The metallic radius of Be is less than the metallic radius of Al.

A. Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

B. Both assertion (A) and reason (R) are true but reason (R) is not the correct

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C. Assertion (A) is true but reason (R) is false.

D. Assertion (A) is false but reason (R) is true.

Answer:



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9. Directions : In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as :

Assertion (A) : Smaller the size of an atom, greater is the electronegativity.

Reason (R) : Electronegativity refers to the tendency of atom to share electrons with other atom.

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explanation of assertion (A).

B. Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C. Assertion (A) is true but reason (R) is false.

D. Assertion (A) is false but reason (R) is true.

Answer:



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10. How does valency of an element vary across a period?



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11. Name two elements of first period in modern periodic table.



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12. The atomic numbers of three elements X, Y and Z are 3, 11 and 17, respectively. State giving reason which two elements will show similar chemical properties.



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13. Two elements X and Y have atomic numbers 12 and 16 respectively. To which period of the modern periodic table do these two elements belong? What type of bond will be formed

between them and why? Also give the chemical formula of the compound formed.



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14. The electronic configuration of an element 'X' is 2, 8, 6. To which group and period of the modern periodic table does 'X' belongs ? State its valency and justify your answer in each case.



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15. An element "X" has mass number 35 and number of neutrons is 18. Identify group number and period of the element "X".



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Ncert Corner Intext Corner

1. Did Döbereiner's triads also exist in the columns of Newlands' Octaves? Compare and find out.



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



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3. What were the limitations of Newlands' Law of Octaves?



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4. Use Mendeléeev's Periodic Table to predict the formulae for the oxides of the following elements:

K, C, Al, Si, Ba.



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5. Besides gallium, which other elements have since been discovered that were left by Mendeléeev in his Periodic Table? (any two)



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



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



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8. How could the Modern Periodic Table remove various anomalies of MendeléeV's Periodic Table?



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9. Name two elements you would expect to show chemical reactions similar to magnesium. What is the basis for your choice?



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10. Name

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



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11. Name

two elements that have two electrons in their outermost shells.



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12. Name

three elements with filled outermost shells.



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13. 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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14. Helium is an unreactive gas and neon is a gas of extremely low reactivity. What, if anything, do their atoms have in common?



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15. In the Modern Periodic Table, which are the metals among the first ten elements?



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16. By considering their position in the Periodic Table, which one of the following elements would you expect to have maximum metallic characteristic?

Ga Ge As Se Be



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Ncert Corner Exercise Questions

1. 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: C



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2. 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

A. Na

B. Mg

C. Al

D. Si

Answer: B



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3. Which element has

two shells, both of which are completely filled with electrons?



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4. Which element has

the electronic configuration 2, 8, 2



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5. a total of three shells, with two electrons in

its valence shell?



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6. Which element has

a total of two shells, with three electrons in its valence shell?



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7. twice as many electrons in its second shell as in its first shell?



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



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



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

What is the atomic number of this element?



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

To which of the following elements would it be chemically similar? (Atomic numbers are given in parentheses.) N(7) F(9) P(15) Ar(18)



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12. The positions of three elements A, B and C in the periodic table are shown below:

Group 16	Group 17
—	—
—	<i>A</i>
—	—
<i>B</i>	<i>C</i>

State whether A is metal or non-metal.



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13. The positions of three elements A, B and C in the periodic table are shown below:

Group 16 Group 17

—

—

—

A

—

—

B

C

State whether C is more reactive or less reactive than A.



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14. The position of three elements A, B and C in the Periodic table are shown below :

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

Will C be larger or smaller in size than B?



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15. The position of three elements A, B and C in the Periodic table are shown below :

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

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



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16. Nitrogen (atomic number 7) and phosphorus (atomic number 15) belong to group 15 of the Periodic Table. Write the electronic configuration of these two elements. Which of these will be more electronegative? Why?



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17. How does the electronic configuration of an atom relate to its position in the Modern Periodic Table?



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18. 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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19. Compare and contrast the arrangement of elements in MendeléeV's Periodic Table and the Modern Periodic Table.



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Ncert Exemplar Multiple Choice Questions

1. Upto which element, the law of octaves was found to be applicable ?

A. Oxygen

B. Calcium

C. Cobalt

D. Potassium

Answer: B



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2. According to Mendeleev' periodic law, the elements were arranged in the periodic table in the order of

- A. increasing atomic number
- B. decreasing atomic number
- C. increasing atomic masses
- D. decreasing atomic masses

Answer: C



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3. In Mendeleev's periodic table, gaps were left for the elements to be discovered later. Which

of the following elements found a place in the periodic table later ?

A. Germanium

B. Chlorine

C. Oxygen

D. Silicon

Answer: A



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4. Which of the following statements (s) about the modern periodic table are incorrect ?

(i) The elements in the modern periodic table are arranged on the basis of their decreasing atomic numbers

(ii) The elements in the modern periodic table are arranged on the basis of their increasing atomic masses.

(iii) Isotopes are placed in adjoining group(s) in the periodic table

(iv) The elements in the modern periodic table

are arranged on the basis of their increasing atomic number.

A. (i) only

B. (i), (ii) and (iii)

C. (ii) and (iv)

D. (iv) only

Answer: B



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5. Which of the following statements about the Modern Periodic Table is Correct?

A. It has 18 horizontal rows known as
Periods

B. It has 7 vertical columns known as
Periods

C. It has 18 vertical columns known as
Groups

D. It has 7 horizontal rows known as
Groups.

Answer: C



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6. Which of the given elements A,B,C,D and E with atomic number 2,3,7,10 and 30 respectively belong to the same period ?

A. A, B, C

B. B, C, D

C. A, D, E

D. B, D, E

Answer: B



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7. The elements A, B, C, D and E have atomic number 9, 11, 17, 12 and 13 respectively. Which pair of elements belongs to the same group ?

A. A and B

B. B and D

C. A and C

D. D and E

Answer: C



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8. Where would you locate the element with electronic configuration 2, 8 in the Modern Periodic Table?

A. Group 8

B. Group 2

C. Group 18

D. Group 10

Answer: C



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9. An element which is an essential constituent of all organic compounds belongs to :

A. group 1

B. group 14

C. group 15

D. group 16

Answer: B



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10. Which of the following is the outermost shell for elements of period 2 ?

A. K shell

B. L shell

C. M shell

D. N shell

Answer: B



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11. Which one of the following elements exhibit maximum number of valence electrons?

A. Na

B. Al

C. Si

D. P

Answer: D



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12. Which of the following gives the correct increasing order of the atomic radii of O, F and N ?

A. O, F, N

B. N, F, O

C. O, N, F

D. F, O, N

Answer: D



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13. Which among the following elements has the largest atomic radii ?

A. Na

B. Mg

C. K

D. Ca

Answer: C



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14. Which of the following elements would lose an electron easily ?

A. Mg

B. Na

C. K

D. Ca

Answer: C



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15. Which of the following elements does not lose an electron easily ?

A. Na

B. F

C. Mg

D. Al

Answer: B



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16. Which of the following are the characteristics of isotopes of an element?

(i) Isotopes of an element have same atomic

masses.

(ii) Isotopes of an element have same atomic number.

(iii) Isotopes of an element show same physical properties.

(iv) Isotopes of an element show same chemical properties.

A. (i), (iii) and (iv)

B. (ii), (iii) and (iv)

C. (ii) and (iii)

D. (ii) and (iv)

Answer: D



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17. Arrange the following elements in the order of their decreasing metallic character Na, Si, Cl, Mg, Al.

A. $Cl > Si > Al > Mg > Na$

B. $Na > Mg > Al > Si > Cl$

C. $Na > Al > Mg > Cl > Si$

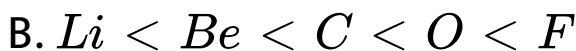
D. $Al > Na > Si > Cl > Mg$

Answer: B



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18. Arrange the following elements in the order of their increasing non-metallic character Li, O, C, Be, F

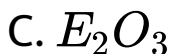
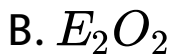


Answer: B



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19. What type of oxide would Eka- aluminium form?



Answer: C



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20. Three elements B, Si and Ge are

A. metals

B. non-metals

C. metalloids

D. metal, non-metal and metalloid

respectively

Answer: C



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21. Which of the following elements will form an acidic oxide ?

- A. An element with atomic number 7
- B. An element with atomic number 3
- C. An element with atomic number 12
- D. An element with atomic number 19

Answer: A



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22. The element with atomic number 14 is hard and forms acidic oxide and a covalent halide. To which of the following categories does the element belong?

A. Metal

B. Metalloid

C. Non-metal

D. Left-hand side element

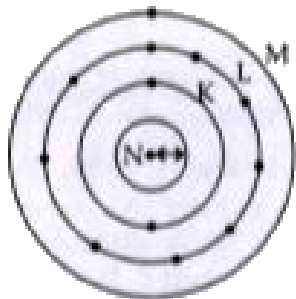
Answer: B



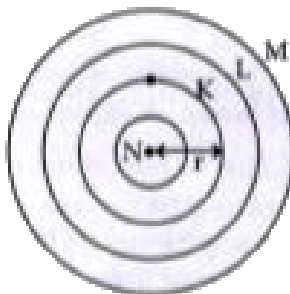
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23. Which one of the following depict the correct representation of atomic radius(r) of

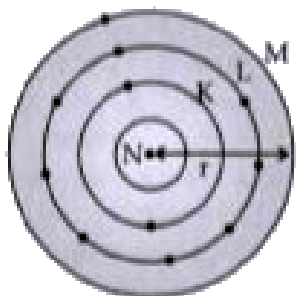
an atom?



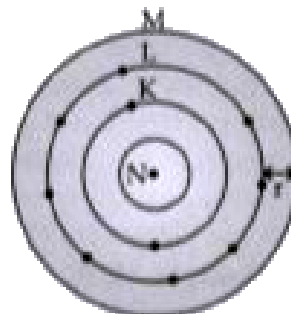
(i)



(ii)



(iii)



(iv)

A. (i) and (ii)

B. (ii) and (iii)

C. (iii) and (iv)

D. (i) and (iv)

Answer: B



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24. Which one of the following does not increase while moving down the group of the periodic table ?

A. Atomic radius

B. Metallic character

C. Valence

D. Number of shells in an element

Answer: C



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25. On moving from left to right in a period in the periodic table, the size of the atom.

A. increases

B. decreases

C. does not change appreciably

D. first decreases and then increases

Answer: B



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26. Which of the following set of elements is written in order of their increasing metallic character ?

A. *Be, Mg, Ca*

B. *Na, Li, K*

C. *Mg, Al, Si*

D. *C, O, N*

Answer: A



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Ncert Exemplar Short Answer Questions

1. The three elements A, B and C with similar properties have atomic masses X, Y and Z respectively. This mass of Y is approximately equal to the average mass of X and Z. What is such an arrangement of elements called as ?
Give an example of such a set of elements.



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2. Elements have been arranged in the following sequence on the basis of their increasing atomic masses.

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

Pick two sets of elements which have similar properties.



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3. Elements have been arranged in the following sequence on the basis of their increasing atomic masses.

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

The given sequence represents which law of classification of elements?



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4. Can the following groups of elements be classified as Dobereiner's triad ?

Na, Si, Cl



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5. Can the following groups of elements be classified as Dobereiner's triad ?

Be, Mg, Ca

Atomic mass of Be 9, Na 23, Mg 24, Si 28, Cl 35, Ca 40. Explain by giving reason.



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6. In Mendeleev's periodic table, the elements were arranged in the increasing order of their atomic masses. However, cobalt with atomic mass of 58.93 amu was placed before nickel having an atomic mass of 58.71 amu. Give reason for the same.



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7. Hydrogen occupies a unique position in modern periodic table. Justify the statement.





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8. Write the formulae of chlorides of Eka-Silicon and Eka-aluminium, the elements predicted by Mendeleev.



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9. Three elements A, B and C have 3,4 and 2 electrons respectively in their outermost shell. Give the group number to which they belong

in the modern periodic table. Also, give their valencies.



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10. If an element X is placed in group 14, what will be the formula and the nature of bonding of its chloride ?



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11. Compare the radii of two species X and Y.

Give reasons for your answer.

(a) X has 12 protons and 12 electrons

(b) Y has 12 protons and 10 electrons.



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12. Arrange the following elements in increasing order of their atomic radii.

Li, Be, F, N



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13. Arrange the following elements in increasing order of their atomic radii.

Cl, At, Br I



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14. Identify and name the metals whose electronic configuration is given below :

2, 8, 2



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15. Identify and name the metal whose electronic configuration are given below :

2, 8, 1



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16. Identify and name the element whose electronic configuration are given below :

2, 8, 7



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17. Identify and name the metal whose electronic configuration is given below :

2, 1



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18. Write the formula of the product formed when the element A (atomic number 19) combines with the element B (atomic number 17) Draw its electronic dot structure. What is the nature of the bond formed ?



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19. Arrange the following elements in the increasing order of their metallic character
Mg, Ca, K, Ge, Ga.



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20. Identify, the elements with the following property .

An element which is a soft and reactive metal.



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21. Identify, the elements with the following property

The metal which is an important constituent of limestone.



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22. Identify, the elements with the following property

The metal which exists in liquid state at room temperature.



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23. Properties of the elements are given below.

Where would you locate the following elements in the periodic table?

A soft metal stored under kerosene



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24. Properties of the elements are given below.

Where would you locate the following

elements in the periodic table?

An element with variable (more than one) valency stored under water.



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25. Properties of the elements are given below.

Where would you locate the following elements in the periodic table?

An element which is tetravalent and forms the basis of organic chemistry



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26. Properties of the elements are given below.

Where would you locate the following elements in the periodic table?

An element which is an inert gas with atomic number 2.



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27. Properties of the elements are given below.

Where would you locate the following elements in the periodic table?

An element whose thin oxide layer is used to make other elements corrosion resistant by the process of "anodising".



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Ncert Exemplar Long Answer Questions

1. An element is placed in 2nd Group and 3rd Period of the Periodic Table, burns in presence of oxygen to form a basic oxide.

Identify the element.



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2. An element is placed in 2nd Group and 3rd Period of the Periodic Table, burns in presence of oxygen to form a basic oxide.

Write the electronic configuration.



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3. An element is placed in 2nd Group and 3rd Period of the Periodic Table, burns in presence of oxygen to form a basic oxide.

Write the balanced equation when it burns in the presence of air.



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4. An element is placed in 2nd Group and 3rd Period of the Periodic Table, burns in presence of oxygen to form a basic oxide.

Write a balanced equation when this oxide is dissolved in water.



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5. An element is placed in 2nd Group and 3rd Period of the Periodic Table, burns in presence of oxygen to form a basic oxide.

Draw the electron dot structure for the formation of this oxide.



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6. An element X (atomic number 17) reacts with an element Y (atomic number 20) to form a divalent halide.

Where in the periodic table are elements X and Y placed?



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7. An element X (atomic number 17) reacts with an element Y (atomic number 20) to form a divalent halide.

Classify X and Y as metal (s), non-metal (s) or metalloid (s).



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8. An element X (atomic number 17) reacts with an element Y (atomic number 20) to form a divalent halide.

What will be the nature of oxide of element Y?

Identify the nature of bonding in the compound formed.



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9. An element X (atomic number 17) reacts with an element Y (atomic number 20) to form a divalent halide.

Draw the electron dot structure of the divalent halide.



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10. Atomic number of a few elements are given below 10, 20, 7, 14

Identify the elements.



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11. Atomic number of a few elements are given below 10, 20, 7, 14

Identify the Group number of these elements in the Periodic Table.



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12. Atomic number of a few elements are given below 10, 20, 7, 14

Identify the Periods of these elements in the Periodic Table.





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13. Atomic number of a few elements are given below 10, 20, 7, 14

What would be the electronic configuration for each of these elements?



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14. Atomic number of a few elements are given below 10, 20, 7, 14

Determine the valency of these elements.



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15. Complete the following crossword puzzle

(Figure)

Across

(1) An element with atomic number 12

(3) Metal used in making cans and member of group 14

(4) A lustrous non-metal which has 7 electrons in its outermost shell

Down

(2) Highly reactive and soft metal which

imparts yellow colour when subjected to flame and is kept in kerosene

(5) The first element of second period

(6) An element which is used in making fluorescent bulbs and is second member of group 18 in the modern periodic table

(7) A radioactive element which is the last member of halogen family

(8) Metal which is an important constituent of steel and forms rust when exposed to moist air

(9) The first metalloid in modern periodic table whose fibres are used in making bullet-proof

vests

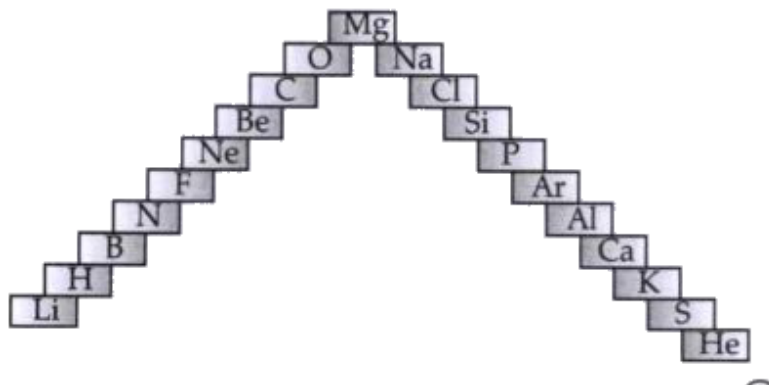
	1	7				2			
		3	8			4	9	5	
									6



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16. In this ladder (Given figure) symbols of elements are jumbled up. Rearrange these symbols of elements in the increasing order of

their atomic number in the Periodic Table.



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17. Arrange them in the order of their group also.



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18. Mendeleev's predicted the existence of certain elements not known at that time and named two of them as Eka-silicon and Eka-aluminium.

Name the elements which have taken the place of these elements.



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19. Mendeleev's predicted the existence of certain elements not known at that time and

named two of them as Eka-silicon and Eka-aluminium.

Mention the group and the period of these elements in the Modern Periodic Table.



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20. Mendeleev's predicted the existence of certain elements not known at that time and named two of them as Eka-silicon and Eka-aluminium.

Classify these elements as metals, non-metals or metalloids.



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21. Mendeleev's predicted the existence of certain elements not known at that time and named two of them as Eka-silicon and Eka-aluminium.

How many valence electrons are present in each one of them?



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22. (a) Electropositive nature of the element(s) increases down the group and decreases across the period.

(b) Electronegativity of the element decreases down the group and increases across the period.

(c) Atomic size increases down the group and decreases across a period (left to right).

(d) Metallic character increases down the group and decreases across a period.

On the basis of the above trends of the

Periodic Table, answer the following about the elements with atomic numbers 3 to 9.

Name the most electropositive element among them.



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23. (a) Electropositive nature of the element(s) increases down the group and decreases across the period.

(b) Electronegativity of the element decreases down the group and increases across the

period.

(c) Atomic size increases down the group and decreases across a period (left to right).

(d) Metallic character increases down the group and decreases across a period.

On the basis of the above trends of the Periodic Table, answer the following about the elements with atomic numbers 3 to 9.

Name the most electronegative element.



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24. (a) Electropositive nature of the element(s) increases down the group and decreases across the period.

(b) Electronegativity of the element decreases down the group and increases across the period.

(c) Atomic size increases down the group and decreases across a period (left to right).

(d) Metallic character increases down the group and decreases across a period.

On the basis of the above trends of the Periodic Table, answer the following about the

elements with atomic numbers 3 to 9.

Name the element with smallest atomic size.



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25. (a) Electropositive nature of the element(s) increases down the group and decreases across the period.

(b) Electronegativity of the element decreases down the group and increases across the period.

(c) Atomic size increases down the group and

decreases across a period (left to right).

(d) Metallic character increases down the group and decreases across a period.

On the basis of the above trends of the Periodic Table, answer the following about the elements with atomic numbers 3 to 9.

Name the element which is a metalloid.



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26. (a) Electropositive nature of the element(s) increases down the group and decreases

across the period.

(b) Electronegativity of the element decreases down the group and increases across the period.

(c) Atomic size increases down the group and decreases across a period (left to right).

(d) Metallic character increases down the group and decreases across a period.

On the basis of the above trends of the Periodic Table, answer the following about the elements with atomic numbers 3 to 9.

Name the element which shows maximum valency.



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27. An element X which is a yellow solid at room temperature shows catenation and allotropy. X forms two oxides which are also formed during the thermal decomposition of ferrous sulphate crystals and are the major air pollutants.

Identify the element X.



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28. An element X which is a yellow solid at room temperature shows catenation and allotropy. X forms two oxides which are also formed during the thermal decomposition of ferrous sulphate crystals and are the major air pollutants.

Write the electronic configuration of X.



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29. An element X which is a yellow solid at room temperature shows catenation and

allotropy. X forms two oxides which are also formed during the thermal decomposition of ferrous sulphate crystals and are the major air pollutants.

Write the balanced chemical equation for the thermal decomposition of ferrous sulphate crystals?



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30. An element X which is a yellow solid at room temperature shows catenation and

allotropy. X forms two oxides which are also formed during the thermal decomposition of ferrous sulphate crystals and are the major air pollutants.

What would be the nature (acidic/ basic) of oxides formed?



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31. An element X which is a yellow solid at room temperature shows catenation and allotropy. X forms two oxides which are also

formed during the thermal decomposition of ferrous sulphate crystals and are the major air pollutants.

Locate the position of the element in the Modern Periodic Table



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32. An element X of group 15 exists as diatomic molecule and combines with hydrogen at 773 K in presence of the catalyst to form a compound, ammonia which has a

characteristic pungent smell.

Identify the element X. How many valence electrons does it have?



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33. An element X of group 15 exists as diatomic molecule and combines with hydrogen at 773 K in presence of the catalyst to form a compound, ammonia which has a characteristic pungent smell.

Draw the electron dot structure of the

diatomic molecule of X. What type of bond is formed in it?



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34. An element X of group 15 exists as diatomic molecule and combines with hydrogen at 773 K in presence of the catalyst to form a compound, ammonia which has a characteristic pungent smell.

Draw the electron dot structure for ammonia and what type of bond is formed in it?



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35. Which group of elements could be placed in Mendeleev's periodic table without disturbing the original order? Give reason.



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36. Give an account of the process adopted by Mendeleev for the classification of elements. How did he arrive at "periodic law"?



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Board Corner Short Answer Type Questions

1. Based on the group valency of elements write the molecular formula of the following compounds giving justification for each :

Oxide of first group elements.



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2. Based on the group valency of elements write the molecular formula of the following compounds giving justification for each :

Halide of the elements of group thirteen, and



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3. Based on the group valency of elements write the molecular formula of the following compounds giving justification for each :

Compound formed when an element, A of

group 2 combines with an element B of group seventeen.



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4. Write the names given to the vertical columns and horizontal rows in the Modern Periodic Table. How does the metallic character of elements vary on moving down a vertical column ? How does the size of atomic radius vary on moving left to right in a horizontal

row ? Give reason in support of your answer in the above two cases.



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5. An element P (atomic number 20) reacts with an element Q (atomic number 17) to form a compound.

Answer the following questions giving reason :

Write the position of P and Q in the Modern Periodic Table and the molecular formula of the compound formed when P reacts with Q.



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6. Write the number of periods and groups in the Modern Periodic Table. How does the metallic character of elements vary on moving from left to right in a period, and



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7. Write the number of periods and groups in the Modern Periodic Table. How does the metallic character of elements vary on moving

down a group ? Give reason to justify your answer.



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8. Na, Mg and Al are the elements of the 3rd period of the Modern Periodic Table having group number 1, 2 and 13 respectively. Which one of these elements has the highest valency, Justify your answer stating the reason for each.



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9. Na, Mg and Al are the elements of the 3rd period of the Modern Periodic Table having group number 1, 2 and 13 respectively. Which one of these elements has the largest atomic radius, Justify your answer stating the reason for each.



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10. Na, Mg and Al are the elements of the 3rd period of the Modern Periodic Table having group number 1, 2 and 13 respectively. Which one of these elements has the maximum chemical reactivity ?



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11. What is periodicity in properties of elements with reference to the Modern Periodic Table ? Why do all the elements of the

same group have similar properties? How does the tendency of elements to gain electrons change as we move from left to right in a period ? State the reason of this change.



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12. Write the electronic configuration of two elements X and Y whose atomic numbers are 20 and 17 respectively.

Write the molecular formula of the compound formed when element X reacts with element Y.

Draw electron-dot structure of the product and also state the nature of the bond formed between both the elements.



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Board Corner Long Answer Type Questions

1. List any three observations which posed a challenge to Mendeleev's Periodic Law.



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2. How does the metallic character of elements change on going from left to right in a period of the periodic table ?



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3. How does the metallic character of elements vary on moving from
from top to bottom in a period of the Modern Periodic Table ? Give reason for your answer.



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4. The electrons in the atoms of four elements A, B, C and D are distributed in three shells having 1, 3, 5 and 7 electrons respectively in their outermost shells. Write the group numbers in which these elements are placed in the Modern Periodic Table. Write the electronic configuration of the atoms of B and D and the molecular formula of the compound formed when B and D combine.



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5. The modern periodic table has been evolved through the early attempts of Dobereiner, Newland and Mendeleev. List one advantage and one limitation of all the three attempts.



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6. Name the scientist who first of all showed that atomic number of an element is a more fundamental property than its atomic mass.



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7. State Modern periodic law.



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Multiple Choice Questions

1. The Law of Octaves was applicable upto which element in the Periodic table:

A. Oxygen

B. Calcium

C. Cobalt

D. Potassium

Answer: B



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2. According to Mendeleev's Periodic Law, the elements were arranged in the periodic table in the order of:

A. Increasing atomic number

B. Decreasing atomic number

C. Increasing atomic masses

D. Decreasing atomic masses

Answer: C



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3. In Mendeleev's periodic table, gaps were left for the elements to be discovered later. Which of the following elements found a place in the periodic table later.

A. Germanium

B. Chlorine

C. Oxygen

D. Silicon

Answer: A



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4. How many elements were arranged by Mendeleev in his periodic table ?

A. 98

B. 63

C. 42

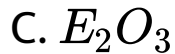
D. 21

Answer: B



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5. What type of oxide would Eka - aluminium form?



Answer: C



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6. Which element was not known when Mendeleev proposed his classification ?

A. Hydrogen

B. Sodium

C. Calcium

D. Germanium

Answer: C



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7. According to Mendeleev's Periodic Law, the elements were arranged in the periodic table in order of their:

- A. increasing atomic number
- B. decreasing atomic number
- C. increasing atomic mass
- D. decreasing atomic mass

Answer: C



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8. Which of the following statements about Newland's law of octaves is correct?

A. It was applicable to all elements.

B. It was applicable to elements up to calcium only.

C. Every first and seventh element had similar properties.

D. Noble gases were discovered that time

Answer: B



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9. In Mendeleev's periodic table, gaps were left for the elements to be discovered later. Which of the following elements found a place in the periodic table later?

A. Chlorine

B. Silicon

C. Oxygen

D. Germanium

Answer: D



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10. The law of octaves was given by _____.

A. Mendeleev

B. Newlands

C. Bohr

D. Moseley

Answer: B



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11. The position of element in the periodic table is generally determined by its:

A. no of valence electrons

B. no of shells

C. both (a) and (b)

D. none of the above

Answer: C



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12. Vertical columns in a periodic table are called:

A. rows

B. periods

C. groups

D. patters

Answer: C



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13. The elements having seven valence electrons in their outermost shell are known as:

A. alkalis

B. halogens

C. alkaline earth metals

D. noble gases

Answer: B



View Text Solution

14. Non metals usually forms:

A. acidic oxides

B. basic oxides

C. neutral oxides

D. amphoteric oxides

Answer: A



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15. The number of shells in elements of the third period is:

A. three

B. two

C. four

D. one

Answer: A



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16. Which of the following group has the maximum radii in a group when considered in the same period?

A. Halogens

B. Alkaline earth metals

C. Alkali metals

D. Noble gases

Answer: C



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17. An element X has 4 shells and 3 valence electrons. What is its period number?

A. 3

B. 5

C. 6

D. 4

Answer: D



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18. The electronic configuration of an element M is 2, 8, 4. In modern periodic table, the element M must be placed in:

- A. 4th group
- B. 2nd group
- C. 14th group
- D. 18th group

Answer: C



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19. Which group elements are called transition metals?

- A. Group number 1 to 2
- B. Group number 13 to 18
- C. Group number 3 to 12
- D. Group number 1 to 8

Answer: C



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20. Elements of which group has only 2 shells and both are completely filled?

A. Helium

B. Neon

C. Calcium

D. Boron

Answer: B



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21. The elements A, B and C belong to group 2, 14 and 16 respectively, of the periodic table. Which two elements of these will form covalent bonds?

A. A and B

B. B and C

C. C and A

D. None of these

Answer: B



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22. An element M is in group 13th of the periodic table. The formula for its oxide is:

A. MO

B. M_2O_3

C. M_3O_2

D. None of these

Answer: B



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23. Which of these belong to the same period?



A. A,B

B. B,C

C. C,A

D. A, B and C

Answer: B



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24. Carbon belongs to the second period and group 14 while silicon belongs to the third period and group 14 of the periodic table. If atomic number of carbon is 6, the atomic number of silicon should be:

- A. 7
- B. 14
- C. 24
- D. 16

Answer: B



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25. Consider the following elements.

20Ca, 80 18Ar, 16S, 4Be, 2He

Which of the above elements would you expect to be in group 16 of the Periodic Table?

A. 20Ca and 16S

B. 20Ca and 80

C. 18Ar and 16S

D. 80 and 16S

Answer: D



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26. The atom of an element has electronic configuration 2, 8, 7. To which of the following elements would it be chemically similar?

A. N(7)

B. P(15)

C. Na(11)

D. F(9)

Answer: D



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27. How many groups are there in the periodic table?

A. 18

B. 8

C. 28

D. 17

Answer: A



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28. Atomic mass number is equal to the:

- A. total number of p and n
- B. total number of p and e
- C. number of Protons
- D. number of neutrons

Answer: A



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29. Five elements A,B,C,D and E have atomic numbers 2,3,7,10 and 18 respectively. The elements which belong to the same period of the periodic table are:

A. A,B,C

B. B,C,D

C. A,D,E

D. B,D,E

Answer: B



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30. The alkaline earth metal present in group 2 and period 3 of the periodic table is:

A. sodium

B. magnesium

C. calcium

D. potassium

Answer: B



View Text Solution

31. The position of three elements A, B and C in the Periodic Table are shown below:



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

A. cation

B. anion

C. both (a) and (b)

D. none of these

Answer: A



View Text Solution

32. Given below is the electronic configuration of two elements. Which of these will be more electronegative?

A = 2,3

B = 2,3,5

A. A

B. B

C. Both (a) and (b)

D. None of these

Answer: A



View Text Solution

33. Where would you locate the element with electronic configuration 2,7 in the Modern Periodic Table?

A. Group 8

B. Group 9

C. Group 18

D. Group 10

Answer: B



View Text Solution

34. The atomic number of element of second period and sixth group is ?

A. 20

B. 56

C. 38

D. 55

Answer: B



View Text Solution

35. Which of the following elements do not belong to same group?

A. P, As

B. Tc, Re

C. Ag, Hg

D. Ne, Xe

Answer: C



View Text Solution

36. Given below is the elements of group 14 of periodic table,





(i) How many metals are there in the group ?

A. 1

B. 2

C. 3

D. 0

Answer: C



View Text Solution

37. Which type of bond is formed by elements if this group?

A. Ionic

B. Covalent

C. Coordinate

D. Metallic bond

Answer: C



View Text Solution

38. In the following set of elements, which one of the following element does not belong to the set. Calcium, Magnesium, Sodium, Beryllium.

A. Calcium

B. Magnesium

C. sodium

D. Beryllium

Answer: C



View Text Solution

39. Which of the period in periodic table has only gaseous elements?

A. 1

B. 2

C. 3

D. 4

Answer: A



View Text Solution

40. Which amongst the given below elements does not belong to the same period.

$6P_{12}$, $7Q_{14}$, $8R_{16}$, $11S_{23}$

A. P, Q and R

B. P and R

C. P, Q, R and S

D. Q and R

Answer: A



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41. Identify the nature of the element:

Period = 3

Valency = 4

Physical property = hard

Nature of compounds : Oxide- acidic halide -
covalent.

A. Metal

B. Non-metal

C. Metalloid

D. Inner Transition elements

Answer: C



View Text Solution

42. Where would you locate the element with electronic configuration 2, 8 in the Modern Periodic Table?

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

Answer: C



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43. The outermost shell for elements of period 2 will.

- A. K shell
- B. L shell
- C. M shell
- D. N shell

Answer: B



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44. An element 'X' is forming an acidic oxide.

Its position in modern periodic table will be:

- A. Group 1 and Period 3
- B. Group 2 and Period 3
- C. Group 13 and Period 3
- D. Group 16 and Period 3

Answer: D



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45. The number of electrons in the valence shell is equal to its

- A. atomic mass
- B. group number
- C. period number
- D. atomic volume

Answer: B



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46. Consider the following statements about an element 'X' with number of protons 13.

(A) It forms amphoteric oxide.

(B) Its valency is three.

(C) The formula of its chloride is XC_3 .

The correct statement(s) is/are.

A. only (A)

B. only (B)

C. (A) and (C)

D. (A), (B) and (C)

Answer: D



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47. The element with atomic number 14 is hard and forms acidic oxide and a covalent halide. To which of the following categories does the element belong?

A. Metal

B. Metalloid

C. Non-metal

D. Left-hand side element

Answer: B



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48. The modern periodic law is given by.....

A. Mendeleev

B. Einstein

C. Bohr

D. Mosley

Answer: D



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49. Which one of the following property does not increase while moving down the group in the periodic table ?

A. Atomic radius

B. Metallic character

C. Valence electrons

D. Number of shells in an element

Answer: C



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50. On moving from left to right in a period in the periodic table, the size of the atom:

A. increases

B. decreases

C. does not change appreciably

D. first decreases and then increases

Answer: B



View Text Solution

51. A liquid non-metal is

A. phosphorous

B. mercury

C. bromine

D. nitrogen

Answer: C



View Text Solution

52. The period that contains only gaseous elements are:

A. 1

B. 2

C. 3

D. 4

Answer: A



View Text Solution

53. The pairs of elements with the following atomic numbers have the same chemical properties:

A. 13 and 12

B. 3 and 11

C. 4 and 24

D. 2 and 1

Answer: B



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54. The positions of four elements A, B, C and D in the Modern Periodic Table are shown below. Which element is most likely to form an

acidic oxide ?



A. A

B. B

C. C

D. D

Answer: C



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55. Elements P, Q, R and S have atomic numbers 11, 15, 17 and 18 respectively. Which of them are reactive non-metals ?

A. P and Q

B. P and R

C. Q and R

D. R and S

Answer: C



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56. Which of the given elements A, B, C, D and E with atomic number 2, 3, 7, 10 and 30 respectively belong to the same period ?

A. A,B,C

B. B, C, D

C. A,D,E

D. B,D,E

Answer: B



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57. Which pair of elements belong to the same group if elements A, B, C, D and E have atomic number 9, 11, 17, 12 and 13 respectively.

A. A and B

B. B and D

C. A and C

D. D and E

Answer: C



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58. _____element would lose an electron easily?

A. Mg

B. Na

C. K

D. Ca

Answer: D



View Text Solution

59. Which among the following elements has the largest atomic radii ?

A. Na

B. Mg

C. K

D. Ca

Answer: D



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60. The correct increasing order of the atomic radii of O, F and N will be:

A. O,F,N

B. N,F, O

C. O, N,F

D. F, O,N

Answer: C



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61. Which one of the following elements exhibits maximum number of valence electrons ?

A. Na

B. Al

C. Si

D. P

Answer: D



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62. The least reactive element in group 17 is.....

A. Fluorine

B. Chlorine

C. Bromine

D. Iodine

Answer: D



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63. Three elements B, Si and Ge are:

A. metals

B. non-metals

C. metalloids

D. metal, non-metal and metalloid
respectively

Answer: C



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64. In periodic table, helium is placed at:

- A. top left corner
- B. bottom right corner
- C. bottom left corner
- D. top right corner

Answer: D



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65. A factor that affects the ionisation potential of an element is

A. atomic size

B. electron affinity

C. electro-negativity

D. neutrons

Answer: A



View Text Solution

66. Which of the following element forms basic oxide?

A. Phosphorous

B. Argon

C. Chlorine

D. Potassium

Answer: D



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67. Which of the two elements will form covalent bonds?

X = Group 2

Y=Group 14

Z= Group 16

A. X and Y

B. Y and Z

C. Z and A

D. None of the above

Answer: B



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68. The correct order of decreasing metallic character of elements Na, Si, Cl, Mg, Al

A. Cl gt Si gt Al gt Mg gt Na.

B. Na gt Mg gt Al gt Si gt Cl

C. Na gt Si gt Mg gt Al gt Cl

D. Al gt Na gt Si gt Cl gt Mg

Answer: B



69. The positions of four elements A, B, C and D in the modern periodic table are shown below.



The correct order of increasing order of atomic size is:

A. $C < B < D < A$

B. $A < B < C < D$

C. $B < C < A < D$

$$D. D < C < B < A$$

Answer: A



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70. As we move down the group, the number of shells:

A. increases

B. decreases

C. remain Same

D. none of the above

Answer: A



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71. The commonly used unit of atomic radii is:

A. angstrom

B. meters

C. millimetres

D. centimetres

Answer: A



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72. Nuclear charge is directly proportional to the:

- A. number of electrons
- B. number of neutrons
- C. number of protons
- D. number of nucleons

Answer: C



View Text Solution

73. What happens to the nuclear charge as we move down the group in a periodic table?

- A. Increases
- B. Decreases
- C. Remains the same
- D. None of the above

Answer: A



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74. The maximum amount of energy required to remove the most loosely bounded electron from an isolated, neutral, gaseous atom is known as:

- A. electron Affinity
- B. ionisation energy
- C. electro negativity

D. none of the above

Answer: B



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75. Which of the following elements has the highest electro negativity?

A. Fluorine

B. Oxygen

C. Boron

D. Beryllium

Answer: A



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76. Which of the following has the highest atomic size?

A. Magnesium

B. Sodium

C. Sulphur

D. Chlorine

Answer: B



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77. Which of the following alkali metals is radioactive in nature?

A. Potassium

B. Rubidium

C. Caesium

D. Francium

Answer: D



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78. Which of the following has zero electron affinity?

A. Halogens

B. Alkali metals

C. Alkaline earth metals

D. Noble gases

Answer: D



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79. Which of the following is the correct order of the atomic radii of the elements oxygen, fluorine and nitrogen?





Answer: D



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80. 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.

A. Na

B. Mg

C. Al

D. Si

Answer: B



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81. Out of Li and Be which has higher ionisation energy?

A. Li

B. Be

C. Both have same

D. None

Answer: A



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82. Observe the following table :



Which element will form an ionic compound with G ?

A. A

B. B

C. C

D. D

Answer: B



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83. Assertion: The triad N, P and As will not represent the Dobereiner's triad.

Reason: Because there is so much difference in their atomic masses.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct explanation of assertion.

C. If assertion is true, but reason is false.

D. If assertion is false, but reason is true.

Answer: B



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84. Assertion: The elements of the same group have similar chemical properties.

Reason: The elements of the same group have the different number of valence electrons.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct explanation of assertion.

C. If assertion is true, but reason is false.

D. If assertion is false, but reason is true.

Answer: C



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85. Assertion: Mendeleev's periodic table was not widely accepted. Reason: It is because hydrogen was not placed properly.

A. if both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true, but reason is not the correct explanation of assertion.

C. If assertion is true, but reason is false.

D. If assertion is false, but reason is true.

Answer: B



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86. Assertion: Nobel gases are placed in different group in periodic table.

Reason: Nobel gases are inert in nature.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct explanation of assertion.

C. If assertion is true, but reason is false.

D. If assertion is false, but reason is true.

Answer: A



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87. Assertion: The elements of the different group have similar chemical properties.

Reason: It is because they have same number of valence electrons.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct

explanation of assertion.

C. If assertion is true, but reason is false.

D. If assertion is false, but reason is true.

Answer: D



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88. Assertion: Metalloids are present in zig-zag rows in periodic table.

Reason: Metalloids have same properties.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct explanation of assertion.

C. If assertion is true, but reason is false.

D. If assertion is false, but reason is true.

Answer: B



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89. Assertion: Chlorine is called halogen.

Reason: It is because chlorine reacts with metals to form salts.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct explanation of assertion.

C. If assertion is true, but reason is false.

D. If assertion is false, but reason is true.

Answer: D



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90. Assertion: Across a period atomic radius decreases.

Reason: It is because electron is added to the same shell.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct explanation of assertion.

C. If assertion is true, but reason is false.

D. If assertion is false, but reason is true.

Answer: A



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91. Assertion: Sodium is a metal whereas sulphur is a non-metal.

Reason: From left to right metallic character decreases.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct

explanation of assertion.

C. If assertion is true, but reason is false.

D. If assertion is false, but reason is true.

Answer: A



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92. Assertion: Non-metals are placed on the right hand side in the periodic table.

Reason: Metalloids shows properties of both metals and non-metals.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct explanation of assertion.

C. If assertion is true, but reason is false.

D. If assertion is false, but reason is true.

Answer: B



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93. Assertion: The atomic radius decreases in moving from left to right along a period.

Reason: This is due to an increase in nuclear charge.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct

explanation of assertion.

C. If assertion is true , but reason is false.

D. If assertion is false , but reason is true.

Answer: A



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94. Assertion : Out of the Na, Mg and Ar, Ar has the highest ionisation enthalpy.

Reason: Ar has stable inert gas configuration.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct explanation of assertion.

C. If assertion is true, but reason is false.

D. If assertion is false, but reason is true.

Answer: A



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95. Assertion: Metallic character decreases across a period.

Reason: Non metals are electropositive in nature.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct

explanation of assertion.

C. If assertion is true, but reason is false.

D. If assertion is false, but reason is true.

Answer: C



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96. Assertion: The ionisation energy of Mg is more than sodium.

Reason: The ionisation energy decreases in a period from left to right.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct explanation of assertion.

C. If assertion is true, but reason is false.

D. If assertion is false, but reason is true.

Answer: B



View Text Solution

97. Assertion: Periodicity in elements is the basis for the periodic table.

Reason: Henry Mosley gave the modern periodic law.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct

explanation of assertion.

C. If assertion is true, but reason is false.

D. If assertion is false, but reason is true.

Answer: B



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98. Assertion: Chlorine is less electronegative than fluorine.

Reason: It is because of its small size.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct explanation of assertion.

C. If assertion is true, but reason is false.

D. If assertion is false, but reason is true.

Answer: B



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Case Based Questions

1. Read the following passage carefully and answer the following questions from Q 110 (i) to 110 (v).

With the constant discovery of a large number of elements, it became necessary to classify them and arrange them according to their periodic properties. Dobereiner arranged the elements with similar properties into groups. He classified some groups of three elements

having similar physical and chemical properties, called Dobereiner's triads. John Newland's later arranged all elements in order of increasing atomic masses and found that every eighth element has similar properties as the first one in the chart.

{Cl, Br, I} is a Dobereiner's triad. In this triad, if the atomic masses of Cl and I are 35.5 and 127 respectively, what is the atomic mass of Br?

A. 162.5

B. 91.5

C. 45.625

D. 81.25

Answer: D



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2. Read the following passage carefully and answer the following questions from Q 110 (i) to 110 (v).

With the constant discovery of a large number of elements, it became necessary to classify them and arrange them according to their

periodic properties. Dobereiner arranged the elements with similar properties into groups. He classified some groups of three elements having similar physical and chemical properties, called Dobereiner's triads. John Newland's later arranged all elements in order of increasing atomic masses and found that every eighth element has similar properties as the first one in the chart.

Which is a Dobereiner's triad:

A. K, Al, Ca

B. Li, Al, Ca

C. Li, Na, K

D. Li, K, Na

Answer: C



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3. Read the following passage carefully and answer the following questions from Q 110 (i) to 110 (v).

With the constant discovery of a large number of elements, it became necessary to classify

them and arrange them according to their periodic properties. Dobereiner arranged the elements with similar properties into groups. He classified some groups of three elements having similar physical and chemical properties, called Dobereiner's triads. John Newland's later arranged all elements in order of increasing atomic masses and found that every eighth element has similar properties as the first one in the chart.

Newland's law of Octaves is obeyed by two elements A and B showing similar properties.

The number of elements between A and B is:

A. 8

B. 6

C. 7

D. 5

Answer: B



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4. Read the following passage carefully and answer the following questions from Q 110 (i) to 110 (v).

With the constant discovery of a large number of elements, it became necessary to classify them and arrange them according to their periodic properties. Dobereiner arranged the elements with similar properties into groups. He classified some groups of three elements having similar physical and chemical properties, called Dobereiner's triads. John Newland's later arranged all elements in order of increasing atomic masses and found that every eighth element has similar properties as the first one in the chart.

Properties of Magnesium are similar to those

of which element according to Newland's law of octaves?

A. Beryllium

B. Lithium

C. Potassium

D. Sodium

Answer: A



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5. Read the following passage carefully and answer the following questions from Q 110 (i) to 110 (v).

With the constant discovery of a large number of elements, it became necessary to classify them and arrange them according to their periodic properties. Dobereiner arranged the elements with similar properties into groups. He classified some groups of three elements having similar physical and chemical properties, called Dobereiner's triads. John Newland's later arranged all elements in order

of increasing atomic masses and found that every eighth element has similar properties as the first one in the chart.

Elements are arranged in Dobereiner's triad on the basis of:

- A. Atomic mass
- B. Atomic Number
- C. Number of Electrons
- D. Number of Neutrons

Answer: A



6. Read the following passage carefully and answer the following questions from Q 111 (i) to 111 (v).

When elements are arranged in the increasing order of their atomic numbers, we observe the recurrence of properties of the elements after certain regular intervals. This recurrence is known as periodicity. A number of physical properties such as atomic size, metallic and non-metallic character, etc. show periodic

variation. Properties vary differently moving from left to right in a period and top to down in a group. Moving in a period from left to right, the number of shells remain the same but valence electron increase by one number. This results in an increase in nuclear charge. Going down in a group, the number of valence shells increases while the valence electrons remain the same. Observe some periodic table trends in the given figure.



In the periodic table, the metallic character of the elements:

A. Increases from left to right and
decreases down the group

B. Decreases from left to right and
increases down the group

C. Increases from left to right and
increases down the group

D. Decreases from left to right and
decreases down the group

Answer: B



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7. Read the following passage carefully and answer the following questions from Q 111 (i) to 111 (v).

When elements are arranged in the increasing order of their atomic numbers, we observe the recurrence of properties of the elements after certain regular intervals. This recurrence is known as periodicity. A number of physical properties such as atomic size, metallic and non-metallic character, etc. show periodic variation. Properties vary differently moving

from left to right in a period and top to down in a group. Moving in a period from left to right, the number of shells remain the same but valence electron increase by one number. This results in an increase in nuclear charge. Going down in a group, the number of valence shells increases while the valence electrons remain the same. Observe some periodic table trends in the given figure.



Moving along a period results in an increase of

A. Atomic size

B. Number of valence electrons

C. Electropositive character

D. All of the above

Answer: B



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8. Read the following and answer the following questions from Q 112 (i) to 112 (v).

Metallic character: The ability of an atom to

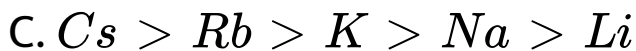
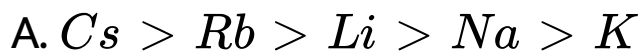
donate electrons and form positive ion (cation) is known as electropositivity or metallic character. Down the group, metallic character increases due to increase in atomic size and across the period, from left to right electro-positivity decreases due to decrease in atomic size.

Non-metallic character: The ability of an atom to accept electrons to form a negative ion (anion) is called non-metallic character or electronegativity. The elements having high electronegativity have a higher tendency to gain electrons and form anion. Down the

group, electronegativity decreases due to increase in atomic size and across the period, from left to right electronegativity increases due to decrease in atomic size.



Which of the following correctly represents the decreasing order of metallic character of Alkali metals plotted in the graph?



D. $Cs > K > Rb > Na > Li$

Answer: C



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9. Read the following and answer the following questions from Q 112 (i) to 112 (v).

Metallic character: The ability of an atom to donate electrons and form positive ion (cation) is known as electropositivity or metallic character. Down the group, metallic

character increases due to increase in atomic size and across the period, from left to right electro-positivity decreases due to decrease in atomic size.

Non-metallic character: The ability of an atom to accept electrons to form a negative ion (anion) is called non-metallic character or electronegativity. The elements having high electronegativity have a higher tendency to gain electrons and form anion. Down the group, electronegativity decreases due to increase in atomic size and across the period, from left to right electronegativity increases

due to decrease in atomic size.



Hydrogen is placed along with Alkali metals in the modern periodic table though it shows non-metallic character:

A. as Hydrogen has one electron and readily loses electron to form negative ion

B. as Hydrogen can easily lose one electron like alkali metals to form positive ion

C. as Hydrogen can gain one electron easily

like halogens to form negative ion

D. as Hydrogen shows the properties of

non metals

Answer: B



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10. Read the following and answer the following questions from Q 112 (i) to 112 (v).

Metallic character: The ability of an atom to

donate electrons and form positive ion (cation) is known as electropositivity or metallic character. Down the group, metallic character increases due to increase in atomic size and across the period, from left to right electro-positivity decreases due to decrease in atomic size.

Non-metallic character: The ability of an atom to accept electrons to form a negative ion (anion) is called non-metallic character or electronegativity. The elements having high electronegativity have a higher tendency to gain electrons and form anion. Down the

group, electronegativity decreases due to increase in atomic size and across the period, from left to right electronegativity increases due to decrease in atomic size.



Identify the reason for the gradual change in electronegativity in halogens down the group.

A. Electronegativity increases down the group due to decrease in atomic size

B. Electronegativity decreases down the group due to decrease in tendency to

lose electrons

C. Electronegativity decreases down the group due to increase in atomic radius

tendency to gain electron decreases

D. Electronegativity increases down the group due to increase in forces of

attractions between nucleus and valence

electrons

Answer: C



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11. Read the following and answer the following questions from Q 112 (i) to 112 (v).

Metallic character: The ability of an atom to donate electrons and form positive ion (cation) is known as electropositivity or metallic character. Down the group, metallic character increases due to increase in atomic size and across the period, from left to right electro-positivity decreases due to decrease in atomic size.

Non-metallic character: The ability of an atom

to accept electrons to form a negative ion (anion) is called non-metallic character or electronegativity. The elements having high electronegativity have a higher tendency to gain electrons and form anion. Down the group, electronegativity decreases due to increase in atomic size and across the period, from left to right electronegativity increases due to decrease in atomic size.



Which of the following reason correctly justifies that, "Fluorine (72pm) has smaller atomic radius than Lithium (152pm)"?

A. F and Li are in the same group. Atomic size increases down the group

B. F and Li are in the same period. Atomic size increases across the period due to increase in number of shells.

C. F and Li are in the same group. Atomic size decreases down the group.

D. F and Li are in the same period and across the period atomic size/radius decreases from left to right

Answer: D



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12. Read the following passage carefully and answer the following questions from Q113 (1) to 113 (v).

Atomic radius is defined as the distance between the center of the nucleus and the outermost shell of electrons. As the effective nuclear charge increases as we move left to right along a period, hence the atomic radii

decreases. There is a decrease in atomic size from Li to F in the second period and from Na to Cl in the third period. In any period the noble size has the largest radius.



The reason due to which atomic radius decreases as we move across a period is:

- A. atomic number decreases
- B. electrons are removed from the atom
- C. atomic mass increases
- D. effective nuclear charge increases

Answer: D



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13. Read the following passage carefully and answer the following questions from Q113 (1) to 113 (v).

Atomic radius is defined as the distance between the center of the nucleus and the outermost shell of electrons. As the effective nuclear charge increases as we move left to right along a period, hence the atomic radii

decreases. There is a decrease in atomic size from Li to F in the second period and from Na to Cl in the third period. In any period the noble size has the largest radius.



The correct order of increasing atomic radii for the element set (O, C, F, Cl, Br] is:

A. FO, C, Cl, Br

B. F, C,O, Cl, Br

C. F, Cl, Br, O, C

D. C,O, F, Cl, Br

Answer: A



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Reasoning Based Questions

1. How does the tendency of the elements to lose electrons change in the Modern Periodic Table in .

(i) a group , (ii) a period and why ?



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2. Write the name given to the vertical columns and horizontal rows in the Modern Periodic Table. How does the metallic character of elements vary on moving down a vertical column? How does the size of atomic radius vary on moving left to right in a horizontal row? Give reason in support of your answer in the above two cases.



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3. The elements Li, Na and K each having one valence electron are in the period 2, 3 and 4 respectively of Modern Periodic Table.

(i) In which group of the periodic table should they be?

(ii) Which one of them is least reactive?

(iii) Which one of them has the largest atomic radius? Give reason to justify your answer.



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4. In the modern periodic table a zig-zag line separates metals from non-metals. What are these elements called and why?



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5. Why are elements chlorine, bromine and iodine called halogens?



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



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7. What is meant by atomic radius? Explain why it the decreases across a period?



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8. Na, Mg and Al are the element of the same period of modern periodic table having one, two and three valence electrons respectively, which of these elements.

(i) has the largest atomic radius,

(ii) is least reactive? Justify your answer starting reason for each case.



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9. How does the metallic character of elements change along a period of the periodic table from the left to the right and why?



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10. Nitrogen (Atomic number 7) and phosphorous (atomic number 15) belong to group 15 of the periodic table. Write the electronic configuration of these two

electrons. Which of these will be more electronegative and why?



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11. Explain why:

The elements of the same group have similar chemical properties.



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12. Explain why:

The elements of the same period have different properties.



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Very Short Answer Type Questions

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



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2. Besides gallium, which other elements have since been discovered that were left by Mendeleev in his Periodic Table? (any two)



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



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4. What were the limitations of Dobereiner's classification?



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5. In the Modern Periodic Table, which are the metals among the first ten elements?



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6. Write two reasons responsible for late discovery of noble gases.



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7. State one reason for placing Mg and Ca in the same group of the periodic table.



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8. By considering their position in the periodic table, which one of the following elements would you expect to have maximum metallic characteristic?

Ga, Ge, As, Se, Be



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9. Compare the radii of two species X and Y. Give reasons for your answer.

(i) X has 12 protons and 12 electrons, (ii) Y has 12 protons and 10 electrons.



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10. If an element X is placed in group 14, what will be the formula and the nature of bonding of its chloride?



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11. The electronic configuration of two elements X and Y are 2, 8, 8, 3 respectively.

Write atomic numbers of X and Y.



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12. Write the atomic numbers of two elements 'X' and 'Y' having electronic configuration 2, 8, 2 and 2, 8, 6 respectively.



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13. The atomic numbers of three elements A, B and C are 12, 18, and 20 respectively. State giving reason, which two elements will show similar properties.



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14. Write any one difference between the electronic configuration of group-1 and group-2 elements."



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15. The atomic numbers of three elements X, Y and Z are 3, 11 and 17, respectively. State giving reason which two elements will show similar chemical properties.



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16. Write the name, symbol and electronic configuration of an element X whose atomic number is 11.



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17. Answer the following questions:

How would the tendency to lose electrons change as we go from left to right across a period of the periodic table?



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18. Answer the following questions:

How do the atomic radii of elements change as we go from left to right in a period of the periodic table?



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19. Elements have been arranged in the following sequence on the basis of their increasing atomic masses.

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

(i) Pick two sets of elements which have similar properties.

(ii) The given sequence represents which law of classification of elements?



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20. State the following:

Write the formulae of chlorides of Eka-silicon and Eka - aluminium.



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21. State the following:

Write the number of elements in 2nd and 5th period in Modern Periodic Table?



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22. State the following:

Write the number of a group in which metallic, metalloid and non-metallic, all three types of elements, are present.



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23. State the following:

Write the number of horizontal rows in the modern periodic table. What are these rows called?



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24. State the following:

Write the number of vertical columns in the modern periodic table. What are these columns called?



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25. State the following:

Write the formula used to determine the

maximum numbers of electrons which a shell in an atom can accommodate?



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Short Answer Type Questions

1. State the main aim of classifying elements. Which that is used in the development of modern periodic table? Name and state the law based on this fundamental property. On

which side of the periodic table one can find metals, non-metals and metalloids?



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2. What is Newlands' law of octaves? Explain with an example.



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3. State Mendeleev's periodic law. Write two achievements of Mendeleev's periodic table.



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4. Answer the following questions:

In Mendeleev's periodic table the elements were arranged in the increasing order of their atomic masses. However, cobalt with atomic mass of 58.93 amu was placed before nickel having an atomic mass of 58.71 amu. Give reason for the same.



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5. Answer the following questions:

In the classification of the then known elements, Mendeleev was guided by two factors. What are those two factors?



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6. Which group of elements could be placed in Mendeleev's periodic table without disturbing the original order? Give reason.



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7. How it can be proved that the basic structure of the Modern Periodic Table is based on the electronic configuration of atoms of different elements?



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8. Use Mendeleev's periodic table to predict the formulae for the oxides of the following elements: K, C, Al, Si, Ba.



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9. Can the following groups of elements be classified as Dobreiner's triad?

(a) Na, Si, Cl, (b) Be, Mg, Ca.

Atomic mass of Be 9, Na 23, Mg 24, Si 28, Cl 35, Ca 40.

Explain by giving reason.



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10. How could the Modern periodic table remove various anomalies of Mendeleev's

periodic table?



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11. Answer the following questions:

What is the basic difference in approach between Mendeleev's periodic law and the Modern periodic law?



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12. Answer the following questions:

In between nitrogen and oxygen, whose ionisation energy is high and why?



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13. Answer the following questions:

How many groups and periods are there in the modern periodic table? How do the atomic size and metallic character of elements vary as we move:

(a) down a group and

(b) from left to right in a period



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14. Answer the following questions:

State the changes in valency and metallic character of elements as well as we move from left to right in a period. Also state the changes, if any, in the valency and atomic size of elements as we move down a group.



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15. The position of three elements A, B and C in the Periodic Table are shown below:



- (i) State whether A is a metal or non-metal.
- (ii) State whether C is more reactive or less reactive than A.
- (iii) Will C be larger or smaller in size than B?
- (iv) Which type of ion, cation or anion, will be formed by element A?



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16. An element belongs to third period and group 16 of modern periodic table.

Determine the number of valence electrons and valency of T.



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17. An element belongs to third period and group 16 of modern periodic table.

Molecular formula of the compound when X reacts with hydrogen and write its electron dot structure.



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18. An element belongs to third period and group 16 of modern periodic table.

Name the element X and state whether it is metallic or non-metallic.



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19. The elements of the second period of the Periodic Table are given below: Li, Be, B, C, N,

O, F.

Give reason to explain why atomic radii decrease from Li to E



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20. The elements of the second period of the Periodic Table are given below: Li, Be, B, C, N, O, F.

Identify the most (a) metallic and (b) non metallic element.



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21. Answer the following questions:

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



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22. Answer the following questions:

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



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23. An element X of group 15 exists as diatomic molecule and combines with hydrogen at 773 K in presence of the catalyst to form a compound, ammonia which has a characteristic pungent smell.

Identify the element X. How many valence electrons does it have?



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24. An element X of group 15 exists as diatomic molecule and combines with hydrogen at 773 K in presence of the catalyst to form a compound, ammonia which has a characteristic pungent smell.

Draw the electron dot structure of the diatomic molecule of X. What type of bond is formed in it?



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25. An element X of group 15 exists as diatomic molecule and combines with hydrogen at 773 K in presence of the catalyst to form a compound, ammonia which has a characteristic pungent smell.

Draw the electron dot structure for ammonia and what type of bond is formed in it?



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26. Which element has:

two shells, both of which are completely filled with electrons?



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27. Which element has:

the electronic configuration 2, 8, 2?



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28. Which element has:

a total of three shells, with four electrons in its valence shell?



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29. Which element has:

a total of two shells, with three electrons in its valence shell?



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30. Which element has:

twice as many electrons in its second shell as in its first shell?



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31. An element X (atomic number 17) reacts with an element Y (atomic number 20) to form a divalent halide.

Where in the periodic table are elements X and Y placed?



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32. An element X (atomic number 17) reacts with an element Y (atomic number 20) to form a divalent halide.

Classify X and Y as metal (s), non-metal (s) or metalloid (s).



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33. An element X (atomic number 17) reacts with an element Y (atomic number 20) to form

a divalent halide.

What will be the nature of oxide of element Y ?

Identify the nature of bonding in the compound formed.



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34. An element X (atomic number 17) reacts with an element Y (atomic number 20) to form a divalent halide.

Draw the electron dot structure of the divalent halide.



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35. From the following elements:

4Be, 9F, 19K, 20Ca

(a) Select the elements having one electron in the outermost shell.

(b) Two elements of the same group.

Write the formula of the compound and mention the nature of the compound formed by the union of 19 K and element X(2, 8, 7).



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36. Answer the following questions:

What are metalloids?



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37. Answer the following questions:

Name any four metalloids?



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38. Answer the following questions:

Predict which of the following elements will form cation and will form anions?

(a) Na,

(b) Al,

(c) Cl,

O.



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39. Answer the following questions:

Name two elements that are inert in nature.



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40. Name the following elements:

Three elements that have a single electron in their outermost shells.



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41. Name the following elements:

Two elements that have two electrons in their outermost shells.



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42. Name the following elements:

Three elements with filled outermost shells.



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43. Name the following elements:

Name two elements you would expect to show chemical reactions similar to magnesium.

What is the basis for your choice?



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44. Answer the following questions:

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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45. Answer the following questions:

Helium is an unreactive gas and neon is a gas of extremely low reactivity. What, if anything, do their atoms have in common?



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

What is the atomic number of this element?



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

To which of the following elements would it be chemically similar ? (Atomic numbers are given in parentheses.) N(7), F(9), P(15), Ar(18).



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48. Nitrogen (atomic number 7) and phosphorus (atomic number 15) belong to group 15 of the Periodic Table. Write the electronic configuration of these two elements. Which of these will be more electronegative? Why?



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49. Answer the following questions:

Three elements X, Y and Z belong to 17th group but 2nd, 3rd and 4th period

respectively. Number of valence electrons in Y is 7. Find the number of valence electrons in X and Z.



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50. Answer the following questions:

Na, Mg, Al and P belong to third period but are placed in first, second, thirteen and fifteenth group. Number of shells occupied in Mg is three. What is the number of occupied shells in Na, Al and P. Give reasons for your answer.



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51. Answer the following questions:

The atomic radius of three elements A, B and C of a periodic table are 186 pm, 104 pm and 143 pm respectively. Giving a reason, arrange these elements in the increasing order of atomic numbers in a period.



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52. Name any two elements of group one and write their electronic configuration. What similarity do you observe in their electronic configuration? Write the formula of oxide of any of the above said elements.



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53. Na, Mg and Al are the elements of the same period of modern periodic table having one, two and three valence electrons

respectively. Which of these element (i) has the largest atomic radius, (ii) is least reactive ? Justify your answer stating reason for each case.



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54. Give an example of:

An inert gas (At . No < 20)



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55. The electronic configuration of an element is 2, 8, 4. State its:

Group and period in the Modern Periodic Table.



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56. The electronic configuration of an element is 2, 8, 4. State its:

Name and write its one physical property.



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57. Based on the group valency of elements write the molecular formula of the following compounds giving justification for each :

Oxide of first group elements.



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58. Based on the group valency of elements write the molecular formula of the following compounds giving justification for each :

Halide of the elements of group thirteen, and



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59. Based on the group valency of elements write the molecular formula of the following compounds giving justification for each :

Compound formed when an element, A or group 2 combines with an element, B of group seventeen.



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1. List the merits and demerits of Mendeleev periodic table.



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2. Answer the following questions:

The modern periodic table has been evolved through the early attempts of Dobereiner, Newland and Mendeleev. List one advantage and one limitation of all three attempts.



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3. Answer the following questions:

Name the scientist who first of all showed that atomic number of an element is a more fundamental property than its atomic mass.

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4. Answer the following questions:

State Modern Periodic law.

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5. Answer the following questions:

List any three observations which posed a challenge to Mendeleev's Periodic law.



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6. Answer the following questions:

How does the metallic character of elements vary on moving from

(a) left to right in a period,

(b) from top to bottom in a group of the

Modern Periodic Table?

Give reason for your answer.



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7. Answer the following questions:

What is a group in the periodic table? In which part of a group would you separately expect the elements to have: (a) the greatest metallic character, (b) the largest atomic size?



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8. Answer the following questions:

In what respects do the properties of group 1 elements differ from those of group 17 elements?



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9. Answer the following questions:

From the stand point of atomic structure, what determines which element will be the first and which is the last in a period of the periodic table?



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10. Answer the following questions:

Explain why, the properties of elements are repeated after 2, 8, 18 and 32 elements in the periodic table.



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11. Answer the following questions:

What are the advantages of the periodic

table?



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12. The electronic configuration of three elements A, B and C is given below:

A = 2. B = 2,6 C = 2,8,2

Which element belongs to the second period?



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13. The electronic configuration of three elements A, B and C is given below:

$$A = 2. \quad B = 2,6 \quad C = 2,8,2$$

Which one of them is a noble gas?



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14. The electronic configuration of three elements A, B and C is given below:

$$A = 2. \quad B = 2,6 \quad C = 2,8,2$$

What is the valency of B?





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15. The electronic configuration of three elements A, B and C is given below:

A = 2. B = 2,6 C = 2,8,2

Name the element C.



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16. The electronic configuration of three elements A, B and C is given below:

A = 2. B = 2,6 C = 2,8,2

Which is a metal?



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17. The electrons in the atoms of four elements A, B, C and D are distributed in three shells having 1,3, 5 and 7, electrons respectively in their outermost shells. Write the group numbers in which these elements are placed in the Modern Periodic Table. Write the electronic configuration of the atoms of B and

D, and the molecular formula of the compound formed when B and D combine.



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18. Atoms of eight elements A, B, C, D, E, F, G and H have the same number of electronic shells but different number of electrons in their outermost shell. It was found that elements A and G combine to form an ionic compound. This compound is added in a small amount to almost all vegetable dishes during

cooking. Oxides of elements A and B are basic in nature while those of E and F are acidic. The oxide of D is almost neutral. Based on the above information answer the following questions:

To which group or period of the Periodic Table do the listed elements belong?



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19. Atoms of eight elements A, B, C, D, E, F, G and H have the same number of electronic

shells but different number of electrons in their outermost shell. It was found that elements A and G combine to form an ionic compound. This compound is added in a small amount to almost all vegetable dishes during cooking. Oxides of elements A and B are basic in nature while those of E and F are acidic. The oxide of D is almost neutral. Based on the above information answer the following questions:

What would be the nature of compound formed by a combination of elements B and F?



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20. Atoms of eight elements A, B, C, D, E, F, G and H have the same number of electronic shells but different number of electrons in their outermost shell. It was found that elements A and G combine to form an ionic compound. This compound is added in a small amount to almost all vegetable dishes during cooking. Oxides of elements A and B are basic in nature while those of E and F are acidic. The oxide of D is almost neutral. Based on the above information answer the following

questions:

Which two of these elements could definitely be metals?



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21. Atoms of eight elements A, B, C, D, E, F, G and H have the same number of electronic shells but different number of electrons in their outermost shell. It was found that elements A and G combine to form an ionic compound. This compound is added in a small

amount to almost all vegetable dishes during cooking. Oxides of elements A and B are basic in nature while those of E and F are acidic. The oxide of D is almost neutral. Based on the above information answer the following questions:

Which one of the eight elements is most likely to be found in gaseous state at room temperature?



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22. Atoms of eight elements A, B, C, D, E, F, G and H have the same number of electronic shells but different number of electrons in their outermost shell. It was found that elements A and G combine to form an ionic compound. This compound is added in a small amount to almost all vegetable dishes during cooking. Oxides of elements A and B are basic in nature while those of E and F are acidic. The oxide of D is almost neutral. Based on the above information answer the following questions:

If the number of electrons in the outer most shell of elements C and G be 3 and 7 respectively, write the formula of the compound formed by the combination of C and G.



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23. Explain the periodicity of following properties of elements:

Atomic radius



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24. Explain the periodicity of following properties of elements:

Ionisation enthalpy

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25. Explain the periodicity of following properties of elements:

Electronegativity

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Differentiate Between

1. Compare and contrast the arrangement of elements in Mendeleev's periodic Table and the Modern Periodic . Table .



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Analysis And Evaluation Based Questions

1. Mendeleev arranged 63 elements known at that time in the periodic table. According to

Mendeleev " the properties of the elements are a periodic function of their atomic masses.

" The table consists of eight vertical columns called ' group' and horizontal rows called periods. Merits of Mendeleev's Periodic Table :

At some places the order of atomic weight was changed in order the order of atomic weight was changed in order to justify the chemical and physical nature. Mendeleev left some gap for new elements which were not discovered at that time . One of the strengths of Mendeleev's periodic table was that , when inert gases were discovered they could be

placed in a new group without disturbing the existing order : Its main characteristics are that the elements are arranged in vertical rows called groups and horizontal rows called periods.



What is the basis of arrangement of elements in Mendeleev's periodic table ?



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2. Mendeleev arranged 63 elements known at that time in the periodic table. According to Mendeleev " the properties of the elements are a periodic function of their atomic masses.

" The table consists of eight vertical columns called ' group' and horizontal rows called periods. Merits of Mendeleev's Periodic Table :

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at that time . One of the strengths of Mendeleev's periodic table was that , when inert gases were discovered they could be placed in a new group without disturbing the existing order : Its main characteristics are that the elements are arranged in vertical rows called groups and horizontal rows called periods.



Why were there some gaps in Mendeleev's periodic table ?

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3. Mendeleev arranged 63 elements known at that time in the periodic table. According to Mendeleev " the properties of the elements are a periodic function of their atomic masses. " The table consists of eight vertical columns called ' group' and horizontal rows called periods. Merits of Mendeleev's Periodic Table : At some places the order of atomic weight was changed in order the order of atomic weight was changed in order to justify the chemical and physical nature. Mendeleev left some gap for new elements which were not discovered

at that time . One of the strengths of Mendeleev's periodic table was that , when inert gases were discovered they could be placed in a new group without disturbing the existing order : Its main characteristics are that the elements are arranged in vertical rows called groups and horizontal rows called periods.



State whether the statement is true or false
Mendeleev's periodic table consists of eight vertical columns called groups and horizontal rows called periods.



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4. Mendeleev arranged 63 elements known at that time in the periodic table. According to Mendeleev " the properties of the elements are a periodic function of their atomic masses. " The table consists of eight vertical columns called ' group' and horizontal rows called periods. Merits of Mendeleev's Periodic Table : At some places the order of atomic weight was changed in order the order of atomic weight was changed in order to justify the chemical

and physical nature. Mendeleev left some gap for new elements which were not discovered at that time . One of the strengths of Mendeleev's periodic table was that , when inert gases were discovered they could be placed in a new group without disturbing the existing order : Its main characteristics are that the elements are arranged in vertical rows called groups and horizontal rows called periods.



X, Y and Z are the elements of a Dobereiner's

traind. If the atomic mass of X is 7 and that of Z is 39. What should be the atomic mass of Y ?



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5. An element belongs to group 2 and element belongs to group 17 of long form of periodic table.

How many valence electrons are there in P?



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6. An element belongs to group 2 and element belongs to group 17 of long form of periodic table.

What is the valency of P?



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7. An element belongs to group 2 and element belongs to group 17 of long form of periodic table.

How many valence electrons are there in Q?





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8. An element belongs to group 2 and element belongs to group 17 of long form of periodic table.

What is the valency of Q?



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9. An element belongs to group 2 and element belongs to group 17 of long form of periodic

table.

Write the chemical formula of P and Q.



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10. By giving reasons state which amongst the given below elements does not belong to the same period.

6P12, 7Q14, 8R16, 11S23



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11. An element X has both K and L shell completely filled with electrons . The element has atomic number 10.

Identify the element.



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12. An element X has both K and L shell completely filled with electrons . The element has atomic number 10.

To which group does it belong ?





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13. An element X has both K and L shell completely filled with electrons . The element has atomic number 10.

Write its electronic configuration .



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14. In each of the following pairs, choose the atom having the bigger size.

Mg (At.No.12) or Cl (At.No. 17)



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15. In each of the following pairs, choose the atom having the bigger size.

Na (At.No.11) or K (At.No.19)



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16. Answer the following questions:

An element X has mass number 40 and

contains 21 neutrons in its atom. To which group of the periodic table does it belong?



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17. Answer the following questions:

The element X forms a compound X_2Y .

Suggest an element that Y might be and give reasons for your choice.



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18. The elements A, B and C belong to groups 1, 14 and 17 respectively of the periodic table.

Which two elements will form a covalent compound?



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19. The elements A, B and C belong to groups 1, 14 and 17 respectively of the periodic table.

Which two elements will form an ionic compound?





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20. The elements A, B and C belong to groups 1, 14 and 17 respectively of the periodic table.

Noble gases do not react with other elements

Why?



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21. The elements A, B and C belong to groups 1, 14 and 17 respectively of the periodic table.

Atom is electrically neutral but still it has a tendency to form an ion. Why?



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22. The atomic numbers of the three elements X, Y and Z are 2, 6 and 10 respectively. Which two elements belong to the same group ? Which two elements belong to the same period ? Give reasons for your choice.



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Creating Based Questions

1. Write the contrasting points present in modern periodic table ,against the following given points of Mendeleev's table :

Elements arranged according to atomic mass .



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2. Write the contrasting points present in modern periodic table ,against the following

given points of Mendeleev's table :

It has 8 groups and 6 periods.



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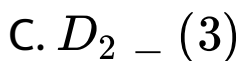
3. Study the carefully and answer the following questions from Q 192 (i) to 192(v).



Which formula is correct for oxide of D?

A. DO

B. D_2O



Answer: C



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4. Read the following information the and answer the following questions from Q 193 (i) to 193 (v).

The following table shows the position of the elements A, B, C, D, E, F, G, H, I, J, K, L, M, N in the

period table.



With reference to the table, answer the following:

Atomic size refers to the radius of an atom.

The atomic size may be visualised as the distance between the centre of the nucleus and the outermost shell of an isolated atom.

Study the given graph which represents the trend of atomic size with respect to the periodic table.



Which of the following is the correct order for atomic size ?

A. $A > B > C > > E$

B. $F < G < H < I$

C. $J > K > L < M > N$

D. $E < F < G < H < I$

Answer: A



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5. Read the following information the and answer the following questions from Q 193 (i) to 193 (v).

The following table shows the position of the elements A, B, C, D, E, F, G, H, I, J, K, L, M, N in the period table.



With reference to the table, answer the following:

Which of the following states Modern Periodic Law?

A. Properties of elements are the periodic function of their atomic number

B. Properties of elements are the periodic function of their atomic size

C. Properties of elements are the group function of their atomic number

D. Properties of elements are the periodic function of their valency

Answer: A



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6. Read the following information the and answer the following questions from Q 193 (i) to 193 (v).

The following table shows the position of the elements A, B, C, D, E, F, G, H, I, J, K, L, M, N in the period table.



With reference to the table, answer the following:

Which of the following reason correctly

justifies that "bromine has smaller atomic radius than potassium"?

A. Br and K are in the same group. Atomic size increases down the group.

B. Br and K are in the same period. Atomic size increases across the period due to increase in number of shells.

C. Br and K are in the same group. Atomic size decreases down the group.

D. Br and K are in the same period. Atomic size decreases across the period from left to right.

Answer: D

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7. Read the following information the and answer the following questions from Q 193 (i) to 193 (v).

The following table shows the position of the

elements A, B, C, D, E, F, G, H, I, J, K, L, M, N in the period table.



With reference to the table, answer the following:

Identify the correct elements from the table.

A. B-boron, C-Neon, M-oxygen

B. G-aluminium, I-Chlorine, K-calcium

C. F-sodium, K- caesium, L- Lithium

D. B-boron, H-carbon, L- Nitrogen

Answer: B



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8. Consider the following elements, A, B, C and D in the given periodic table:



Which element is the most electronegative element?



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9. Consider the following elements, A, B, C and D in the given periodic table:



Which element is the most unreactive ?



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10. Consider the following elements, A, B, C and D in the given periodic table:



Which element forms acidic oxides?





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11. Consider the following elements, A, B, C and D in the given periodic table:



Which element has 6 electrons in outer orbital?



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12. Question number 194(i)-194(iv) are based on table given below. Study the table and

answer the following questions.



What is valency of oxygen?

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13. Question number 194(i)-194(iv) are based on table given below. Study the table and answer the following questions.



Give the chemical formula formed by hydrogen and oxygen.



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14. Question number 194(i)-194(iv) are based on table given below. Study the table and answer the following questions.



What is the electron dot structure of above formed compound in (ii) part?



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15. The position of eight elements in the modern periodic table is given below with atomic numbers. Period Number.



Answer the following question with reference to the above table.

Write the electron configuration of Calcium (Ca).



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16. The position of eight elements in the modern periodic table is given below with atomic numbers. Period Number.



Answer the following question with reference to the above table.

Predict the number of valence electrons in Strontium (Sr).



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17. The position of eight elements in the modern periodic table is given below with atomic numbers. Period Number.



Answer the following question with reference to the above table.

What is the number of shells in Rubidium (Rb)?



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18. The position of eight elements in the modern periodic table is given below with atomic numbers. Period Number.



Answer the following question with reference to the above table.

Predict whether K is a metal or a non-metal?



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19. Based on the table given below answer the following questions:



What is the electronic configuration of F?



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20. Based on the table given below answer the following questions:



What is the number of valence electrons in the atom of F?



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21. Based on the table given below answer the following questions:



Write the size of the atoms of E, F, G and H in decreasing order.



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22. Based on the table given below answer the following questions:



Out of B, E and F which one has the biggest atomic size?

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23. 

What is the electronic configuration of F?

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24. 

What is the number of valence electrons in the atom of F?



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25. 

Write the size of the atoms of E, F, G and H in decreasing order.



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26. 

Out of B, E and F which one has the biggest atomic size?



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27. An element X forms a chloride with the formula XCl_2 which is a solid with a high melting point. Predict the most likely outer orbital electronic configuration of X and also name two more elements from same group of

the Periodic Table to which elements X belongs.



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28. Oxygen (atomic number 8) and sulphur (atomic number 16) belong to group 16 of the periodic table. Write the electronic configuration of the two elements. Which of them will be more electronegative ? Why?



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29. Consider the following elements, A, B, C and D in the given periodic table :



Which element is the most electronegative element?



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30. Consider the following elements, A, B, C and D in the given periodic table :



Which element is the most unreactive?



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31. Consider the following elements, A, B, C and D in the given periodic table :



Which element forms acidic oxides?



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32. Consider the following elements, A, B, C and D in the given periodic table :



Which element has 6 electrons in outer orbital

?



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