

CBSE Class 10 Science MCQ Chapter 5 Periodic Classification of Elements

Q1) Which of the following forms the basis of the modern periodic table?

- a) Atomic mass
- b) Atomic number
- c) Number of nucleons
- d) All of these

Correct Answer: Option (b)

Q2) Which of the following is the most reactive element of the group 17?

- a) Oxygen
- b) Sodium
- c) Fluorine
- d) Magnesium

Correct Answer: Option (c)

Q3) Which of the following is the correct order of the atomic radii of the elements oxygen, fluorine and nitrogen?

- a) $O < F < N$
- b) $N < F < O$
- c) $O < N < F$
- d) $F < O < N$

Correct Answer: Option (d)

Q4) 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

Correct Answer: Option (b)

Q5) What happens to the electropositive character of elements on moving from left to right in a periodic table?

- a) Increase
- b) Decreases
- c) First increases then decreases
- d) First decreases then increases

Correct Answer: Option (b)

Q6) What is the other name for group 18th elements?

- a) Noble gases
- b) Alkali metals
- c) Alkali earth metals
- d) Halogens

Correct Answer: Option (a)

Q7) 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

Correct Answer: Option (c)

Q8) The electronic configuration of an element M is 2, 8, 4. In modern periodic table, the element M is placed in

- a) 4th group
- b) 2nd group
- c) 14th group
- d) 18th group

Correct Answer: Option (c)

Q9) Which of the following elements has 2 shells and both are completely filled?

- a) Helium
- b) Neon
- c) Calcium
- d) Boron

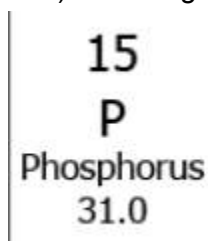
Correct Answer: Option (b)

Q10) Which option describes the achievements of the Mendeleev's Periodic Table?

- (a) prediction of noble gases
- (b) it eliminated the blank spaces left in the table
- (c) predicting that the elements can be arranged based on their properties
- (d) an element in a trend has an average atomic mass of the elements above and below it

Correct Answer: Option (a)

Q11) The image shows an element with its atomic number and mass number.



Which option arranges the element in the periodic table?

- (a) group - 1; period - 1
- (b) group - 5; period - 3
- (c) group - 10; period - 1
- (d) group - 15; period - 3

Correct Answer: Option (d)

Q12) A student learns that the atomic size depends on the atomic radius of the elements. How does the atomic radius of elements in the third-period change as one goes from sodium to argon?

- (a) Option 1: atomic radius increases from sodium to argon
- (b) atomic radius decreases from sodium to argon
- (c) atomic radius increases as new shells are added
- (d) atomic radius decreases due to the addition of new shells

Correct Answer: Option (b)

Q13) Boron is a non-metal and is placed under group 13 and period 2. How can boron form bonds with other elements?

- (a) by sharing 5 electrons
- (b) by sharing 3 electrons
- (c) by sharing 2 electrons
- (d) by sharing 1 electron

Correct Answer: Option (b)

Q14) Electronegativity is defined as the ability of an element to form bonds by gaining electrons. How does the electronegativity of elements vary across the periods?

- (a) it increases as the number of shells increases
- (b) decreases as the number of shells decreases
- (c) increases as the more of electrons are added to the same shell
- (d) it decreases as the more of electrons are added to the same shell

Correct Answer: Option (c)

Q15) What is the order of the metallic character down the group?

- (a) it decreases as new shells are added to the element
- (b) it increases as electrons move away from the nucleus
- (c) increases as new atoms are added in the same shell
- (d) it decreases as the effective nuclear charge on the electron increases

Correct Answer: Option (b)

Q16) An element X has atomic number 9. In which period and group, it can be placed in the modern periodic table?

(a)

Period	Group
2	17

(b)

Period	Group
7	17

(c)

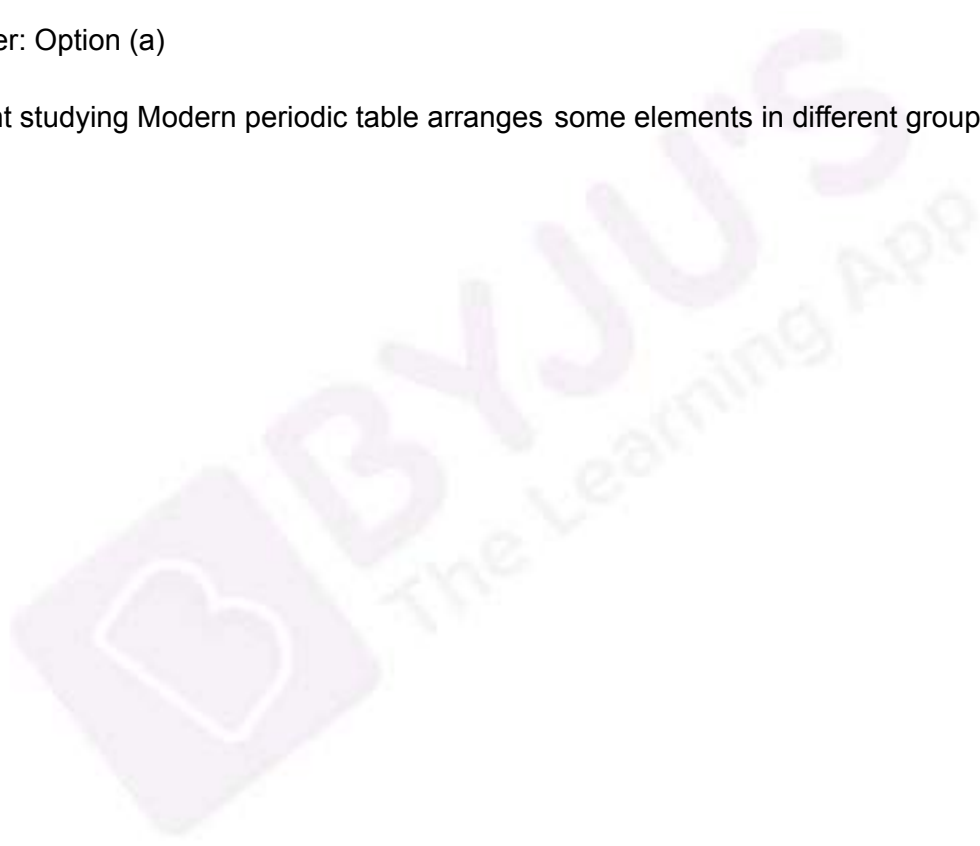
Period	Group
2	7

(d)

Period	Group
7	7

Correct Answer: Option (a)

Q17) A student studying Modern periodic table arranges some elements in different groups, as shown.



Group 1

H Hydrogen
Li Lithium
Na Sodium
K Potassium
Rb Rubidium
Cs Caesium
Fr Francium

Group 2

Be Beryllium
Ca Calcium
Mg Magnesium
Sr Strontium
Ba Barium
Ra Radium

Group 18

He Helium
Ne Neon
Ar Argon
Kr Krypton
Xe Xeon
Rn Radon
Og Oganesson

Which group supports the guidelines of the Modern Periodic table?

- (a) group 1
- (b) group 18
- (c) groups 1 and 2
- (d) groups 1 and 18

Correct Answer: Option (d)

Q18) A student studies about Mendeleev's periodic table and lists some statements.

- P. No fixed position was given to carbon in the periodic table.
- Q. The atomic masses do not increase in a regular manner.
- R. Isotopes of an element have different chemical properties but similar atomic masses.

Which option lists the limitations of the Mendeleev's Periodic Table?

- (a) only P
- (b) only R
- (c) both P and Q
- (d) both Q and R

Correct Answer: Option (a)

Q19) Which option arranges the elements of period four in the correct groups?

(a)

Mn 54.94	Cr 50.20	V 50.94	Ti 47.90	Sc 44.96	Ca 40.08	K 39.102
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(b)

K 39.102	Ca 40.08	Ti 47.90	Sc 44.96	V 50.94	Cr 50.20	Mn 54.94
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(c)

K 39.102	Ca 40.08	Sc 44.96	Ti 47.90	V 50.94	Cr 50.20	Mn 54.94
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(d)

Mn 54.94	Cr 50.20	V 50.94	Sc 44.96	Ti 47.90	Ca 40.08	K 39.102
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Correct Answer: Option (c)

Q20) What is the trend of valency along the periods in the modern periodic table?

- (a) it increases from left to right
- (b) it decreases from right to left
- (c) it increases and then decreases
- (d) it decreases and then increases

Correct Answer: Option (c)

