PERIODIC CLASSIFICATION OF ELEMENTS
WORKSHEET-5
1MARK QUESTIONS

1. Mention one reason why elements should be classified?

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

3. Chlorine, Bromine and Iodine form a Dobereiner's triad. The atomic masses of chlorine and iodine are 35.5 and 126.9 respectively. Predict the atomic mass of bromine. **(CBSE-2012)**

4. Who proposed the law of octaves? Mention its one limitation.

2MARKS QUESTIONS

5 .State and explain the Mendeleev's Periodic Law and Modern Periodic Law. Also state the basis of classification for the two laws mentioned above.

6. State the merits and demerits of Mendeleev's Periodic Law. How are the position of isotopes decided in the modern periodic table**?** **(AI-2009)**

7. What would be the nature of the oxides formed by the elements on the left hand side of the periodic table? How many valence electrons do these elements have**?** **(CBSE-2011)**

8. Based on electronic configuration, how will you identify the first and the last element of a period.

9. Lithium sodium, potassium are all metals that react with water to liberate hydrogen gas. Is there any similarity in the atoms of these elements **?** **(CBSE-2009)**

10. What would be the nature of the oxides formed by the elements on the left hand side of the periodic table? How many valence electrons do these elements have?

3MARKS QUESTIONS

11. Part of the modern periodic table is given below:

Li (3)	Be (4)
Na (11)	Mg (12)
K (19)	Ca (20)
Rb (37)	Sr (38)

(i) Predict the number of valence electrons in Ca (20)
(ii) How many shells are present in Na (11)?
(iii) Arrange Mg, Ca, Be, Sr in increasing order of their atomic size.
(iv) Predict whether Rb is a metal or a non-metal.
(v) Out of Na, Li, Be, Mg which has the largest atomic size?
(vi) Give the electronic configuration of K

12. Give reasons:

(i) Lithium (3) and Sodium (11) are considered active metals.
(ii) Potassium (19) is more reactive than sodium (11)
(iii) Neon has zero valency.

(iv) Magnesium is a metal.

13. The position of five elements in the periodic table is given below:

Period/Group	Group 1	Group 2	Group 15	Group 16
Period II		A		B
Period III	C		D	E

(i) What is the number of valence electrons in B?
(ii) Which elements will have the smallest atomic size?
(iii) Which elements will form acidic oxides?
(iv) Which elements will form basic oxides?
(v) Which element will be the most metallic?

14. As we move horizontally from left to right, what happens:

(i) To the metallic character of elements?
(ii) To the tendency to gain electrons?
(iii) To the valency of elements?
Give reasons for your answers.

HOTS QUESTIONS:

15. An element X of group 15 and period 2 exists as diatomic molecule. It combines with hydrogen and forms ammonia in the presence of a suitable catalyst.

(i) Identify the element X.
(ii) Write the electronic configuration of X and count the number of valence electrons.
(iii) Draw the electron dot structure of the diatomic molecule of X and name the type of bond formed.

16. An element Y exists as yellow solid, it shows catenation and allotropy. The element Y forms two types of oxides which are also the products of thermal decomposition of ferrous sulphate. These gases are the major cause of air pollution.

(i) Write the balanced chemical equation for the thermal decomposition of ferrous sulphate.
(ii) Name the oxides which are formed by the element Y.
(iii) Identify element Y and write its electronic configuration.
(iv) Locate the position (group and period) of the element Y in the modern periodic table.

17. VALUE BASED QUESTION

Government school has one teaching classes I to V all the subjects. She is able to teach only few students of same class at a time and other student keep on making noise in the class . Teachers keep on shouting in the class and often beat the students also. Some intelligent students learn very fast and even help other students of their class as well as lower classes

a) How will you compare the tendency to loose or gain electrons with the students nature.

b) Is the class like periodic table or not ? Give reasons.

c) Do you think is it possible to teach classes I to V together by one teacher ? Give one reason.

d) Give your suggestions to solve the problem.

e) Which value is possessed by students who help other students in studies ?

f) Should corporal punishment be banned in school ? Give one reason to support your answer.