

# JSUNIL TUTORIAL, SAMASTIPUR

## X chemistry Ch - 5 Periodic Classification of Elements Part-1

### 1 mark questions:-

1. What is the name given to group of three similar elements by Dobereiner?
2. State "Newlands law of Octaves" for classification of elements.
3. Name the fundamental property used by Mendeleev as the basis of classification.
4. How many groups and periods are there in the Modern periodic table?
5. What was the prediction of Mendeleev regarding the gaps in his periodic table?
6. How is valence of an element determined?
7. What will be the valence of an element having atomic number 16?
8. How does valence vary in going down a group?
9. Why inert gases have zero valences?
10. What would be the valence of an atom containing 8 electrons in its outermost shell?
11. How does the electronegative character of elements vary along a period of the periodic table?
12. The present classification of elements is based on which fundamental property of elements?
13. Among first ten elements in the modern periodic table name the metals present.
14. Metals are on which side of Modern periodic table?
15. State Mendeleev's periodic law.
16. Name two elements, other than Gallium, whose existence was predicted by Mendeleev.
17. State Modern Periodic law.
18. Write the name given to the vertical columns in a periodic table.
19. What name is given to the horizontal rows in a periodic table?
20. Why does silicon is classified as Metalloid?

## X chemistry Ch - 5 Periodic Classification of Elements Part-2

2 marks question:-

21. State two limitations of Newland's law of Octaves.
22. Name the scientist who proposed modern periodic law? On which fundamental property of elements it is based?
23. Why could no fixed position be given to hydrogen in Mendeleev's Periodic table?
24. What are metalloids? Give two examples.
25. In group 1 of periodic table three elements X, Y and Z have atomic radii 133 pm , 95pm and 65pm respectively giving a reason, arrange them in the increasing order of their atomic number in the group.
26. In modern periodic table, the isotopes of Chlorine Cl-35 and Cl-37 having different atomic masses will be kept in different slots or they would be assigned same position on the basis of their chemical properties? Give reason in support of your answer.
27. Nitrogen (At no. 7) and Phosphorus (At no. 15) belong to group 15 of the periodic table:-
  - (i) Write the electronic configuration of the two.
  - (ii) Predict whether they are metallic or nonmetallic in nature.
28. How and why does the atomic size vary as you go down a group?
29. Why was Dobereiner system of classification of elements into triads not found to be useful?

## X chemistry Ch - 5 Periodic Classification of Elements Part-3

### 3 marks questions:-

30. State three merits of Modern periodic table.

31. What are amphoteric oxides? Choose the amphoteric oxide from among the following oxides :-  $\text{Na}_2\text{O}$ ,  $\text{ZnO}$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{CO}_2$ ,  $\text{H}_2\text{O}$

32. Study the variation in the atomic radii of first group elements given below and arrange them in increasing order :-

Group I element	Na	Li	Rb	Cs	K
Atomic Radii P.M	86	152	244	262	231

33. An element X has the electronic configuration as 2, 8, 7 :-

- What is the atomic number of the element?
- What will be the formula of its compound formed with Na?
- What is the name given to the family of this element?

34. How do you calculate the valence of the element from its electronic configuration? What is the valence of Mg with atomic number 12 and sulphur with atomic number 16? How does the valence vary in going down in a group?

35. Atomic radii of the elements of the period II are as follows:-

Period II elements :	Be	B	O	N	C	Li
Atomic Radius :	111	88	66	74	77	152

- Arrange them in decreasing order of their atomic radii.
- How does the atomic size vary on moving from left to right in a period? Explain why?
- How will the tendency to lose electrons will vary on moving from left to right in this period II?

36. Oxygen (O, 8) and sulphur (S, 16) belong to group 16 of the periodic table:-

- Write the electronic configuration and valence of these two elements?

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(ii) Which among these will be more electronegative? Why?

37. The positions of three elements A, B and C in the periodic table are given below:-

Group 16

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
B

Group 17

\_\_\_\_\_  
A  
\_\_\_\_\_  
C

(i) State element C is a metal or nonmetal.

(ii) Which is smaller B or C and why?

(iii) Which type of ion will be formed by A, B and C?

**5 marks questions:-**

38. Two elements 'A' and 'B' belong to group 1 and 2 respectively in the same period.

Compare them with respect to :-

(a) Number of valence electrons.

(b) Valency

(c) Metallic character

(d) Size of atom

(e) Formulae of their oxides.

39. From the table answer the following questions:-

	1	2	13	14	15	16	17	18
Lithium				carbon		oxygen	L	Neon
X	A					S	G	Q
Y						R		
Z						T		

(a) Write the formulae of chloride of A.

(b) What is the electronic configuration of 'S'?

(c) Name the noble gas.

(d) Write the formula of compound which carbon forms with G.

(e) What name is given to the family of group 17 element?