

SUMMATIVE II WORKSHEET

CLASS X

SUBJECT: CHEMISTRY

Chapter: Periodic Classification of element.

- 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.
- An element X belongs to 3rd period and group 2 of the periodic table. State
 - Number of valence electrons.
 - Valency
 - Metal or non-metal.
 - Name of the element.
- An element X is in group 2 of the periodic table
 - What will be the formula of its chloride.
 - What will be the formula of its oxide.
- An element X has mass number 40 and contains 21 neutrons in its atom. To which group of the periodic table does it belong?
- Find the neutral atom in the periodic table which has the same number of electrons as K^+ and Cl^- . What is this number?
- The elements X, Y and Z belong to group 2, 14 and 16 respectively of the periodic table
 - Which two elements will form covalent bond?
 - Which two elements will form an ionic bond?
- The elements A, B, C and D belong to groups 1, 2, 14 and 17 respectively of the periodic table. Which of the following pairs of elements would produce a covalent bond?
 - A and D
 - C and D
 - A and B
 - B and C
- A metal X is in the first group of the periodic table. What will be the formula

of its oxide?

9. What is the usual number of valence electrons and valency of group 18 elements of the periodic table?
10. State one reason for keeping fluorine and chlorine in the same group of the periodic table.
11. In the following set of elements, one element does not belong to the set. Select this element and explain why it does not belong ?



12. The element X forms a compound X_2Y . Suggest one element that Y might be and give reasons.
13. In each of the following pairs, choose the atom having the bigger size.
(a) Mg or Cl. (b) Na or K.
14. Element X and Y belong to groups 1 and 17 of the periodic table respectively. What will be the nature of the bond in the compound XY ? Give two properties of XY.
15. An atom has the electron structure of 2, 7.
(a) What is the atomic number of this atom?
(b) To which of the following would it be chemically similar?



(c) Why would you expect it to be similar?

16. The atomic numbers of three elements A, B and C are given below :

Element	Atomic No.	Electronic configuration
A	3	2, 1
B	9	2, 7
C	11	2, 8, 1

Giving reasons state, which two elements will show similar chemical properties.

17. The electronic configuration X is ;

K	L	M
2	8	6

- (i) What is the group number of element X in the periodic table?
- (ii) What is the period number of element X in the periodic table?
- (iii) What is the number of valence electrons in an atom of X ?
- (iv) What is the valency of X?

(v) Is it a metal or a non-metal?

18. In the following set of elements, one element does not belong to the set. Select this element and explain why it does not belong?



19. The electronic configuration of three elements X, Y and Z are given below:

X	2
Y	2, 6
Z	2, 8, 2

- (i) Which element belongs to second group?
(ii) Which element belongs to second period?
(iii) Which element belongs to eighteenth group?

20.

1							18
a	2	13	14	15	16	17	
	h	b	g				c
d					f	e	

- (i) Select the letter which represent an alkali metal.
(ii) Select the letter which represent a noble gas.
(iii) Select the letter which represent a halogen.
(iv) What type of bond is formed between a and e?
(v) What type of bond is formed between d and e?
(vi) Which element will form a divalent anion?
(vii) What type of bond is formed between g and e?
(viii) What type of bond is formed between a and d?
(ix) Which element will form only covalent compound?
(x) Which element will form a divalent cation?
21. How could the modern periodic law remove various anomalies of Mendeleev's periodic table?
22. Where should hydrogen be placed in the periodic table? Give reason for your answer.
23. (a) Name the three elements that have a single electron in their outermost

shell?

(b) Name two elements that have two electrons in their outermost shell?

(c) Name three elements with completely filled outermost shells?

24. How does the valency of elements vary in going down a group of the periodic table?
25. Helium and Neon are unreactive gases. What, if anything, do their atoms have in common?
26. How does the atomic size vary on going from top to bottom in a group of the periodic table? Why does it vary this way?
27. What happens to the number of valence electrons in the atoms of elements as we go down in a group of the periodic table?
28. How does the tendency to lose electrons change as we go down in Group I of the periodic table?
29. How does the tendency to gain electrons change as we go down in Group 17 of the periodic table?
30. Explain why?
 - (i) All the elements of a group have similar chemical properties.
 - (ii) All the elements of a period have different chemical properties.
31. An element X belongs to group 2 and another element Y belongs to Group 15 of the periodic table:
 - (a) What is the number of valence electrons in X.
 - (b) What is the valency of X.
 - (c) What is the number of valence electrons in Y.
 - (d) What is the valency of Y.
32. Nitrogen (Atomic number 7) & 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?
33. State the following:
 - (a) Mendeleev's periodic law.
 - (b) Modern periodic law.
34. What was the Mendeleev's basis for the classification of elements?
35. The three elements predicted by Mendeleev from the gaps in his periodic table were known as eka-barium, eka-aluminium and eka-silicon. What names

were given to these elements when they were discovered later on?

36. How does the properties of eka-aluminium element predicted by Mendeleev compare with the actual properties of gallium element? Explain your answer?
37. State one example of a Dobereiner's triad, showing in it that the atomic mass of middle element is half-way between those of the other two.
38. What were the limitations of Dobereiner's classification of elements?
39. X and Y are the two elements having similar properties which obey Newlands' law of octaves. How many elements are there in between X and Y?
40. What is Newlands' law of octaves? Explain with an example?
41. What were the limitations of Newlands' law of octaves?

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