SSLC CHEMISTRY

CHAPTER WISE QUESTIONS

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PERIODIC TABLE AND

ELECTRONIC CONFIGURATION.

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Unit 1

Periodic table and electronic configuration

Questions

1) The maximum number of electrons are present in f sub shell?
(2,6,10,14)

2) The 2 sub shell electronic configuration of cromium is given.

i) $1S^2\ 2S^2\ 2P^6\ 3S^2\ 3P^6\ 3d^4\ 4s^2$

ii)$1S^2\ 2S^2\ 2P^6\ 3S^2\ 3P^6\ 3d^5\ 4s^1$ write reason to select this electronic configuration.

3) The last sub shell of an element is 3p and there are 3 electrons in it.
a) Write the complete electronic configuration of the element?
b) Identify its group and period?

4) The atomic number of an element is 19.
a) Write the sub shell electronic configuration of the element?
b) Identify it group, period, block and oxidation umber.
c) Write any one characteristics of the block to which the element belong?

5) The outer most electronic configuration of element A (symbol is not real) is $3s^2\ 3p^4$
a) which period belongs to the element?
b) Find the group number of the element?
c) What is the block to which the element belongs?

6) There are sub shell in shell around the nucleus.
a) What is the maximum number of electron that can be accommodated in d sub shell?
b) Write the possible sub shells in 3^{rd} shell in the increasing order of energy?
c) Which the following is the outer most electronic configuration of copper?
(Cu=29) A: $3d^9\ 4s^2$. B: $3d^{10}\ 4s^1$. Justify your answer?

7) Electrons are situated at the sub shell of an atom
a) write the possible sub shell of 3^{rd} shell ie, M shell
b) complete the following table.

element	Sub shell electronic configuration	The highest sub shell number in electron is filled	Period
$_5X$	$1s^2\ 2s^2\ 2p^1$	2	2
$_{11}Y$	$1s^2\ 2s^2\ 2p^6\ 3s^1$	3	A
$_{19}Z$	B	4	C

8) Analyses the given table, and answer the following question.

Element(symbols are not real)	Atomic Number
P	11
Q	18
R	17
S	26

a) which is the noble gas element?
b) which element belongs to 1st group?
c) write the chemical formula of the new compound formed between P& R?
d) which element shows different electronic configuration.? write the electronic configuration of that element?

9) Which sub shell is common for every shell?

10) Lanthanoids: 6th period actinoids: ……

11) How many electrons are present in the outermost sub shell electronic configuration of noble gas (except He) [2,6,10,14]

12) Pick out the wrong sub shell electronic configuration from these given below?
(2p 6s 3f 5d 4s 1p)

13) How many electrons are present in the outer most sub shell of 17th group element?

14) The sub shell electronic configuration of some element is given blow.
X- [Ne] $3s^2$ $3p^1$
Y-[Ar] $4s^1$
Z-[Ar] $3d^6$ $4s^2$
a) write the complete electronic configuration of element Y?
b) which elements shows different oxidation state?
c) find group number of the element?

15) Two compounds of Fe are given
$FeCl_2$ $FeCl_3$ (oxidation state of Fe= -1)
a) in which compound Fe shows +2 oxidation state?
b) write the sub shell electronic configuration of Fe^{3+}?
c) why transition element shows different oxidation state?

16) The element X belongs to 16th group and element Y belongs to 1st group in periodic table.
a) find oxidation state of X & Y?
b) write the chemical formula of new compound, when reacting these compounds?

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17) The sub sell Electronic configuration of X^{2+} ion is $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6$

a) find the atomic number of the element X ?

b) what is block to which element is belongs?

18) Given, sub shell electronic configuration of an element is [Ar] $3d^5\ 4s^1$

a) in how many shell the electrons are occupied?

b) what is the sub shell to which the last electron is filled?

c) what is the atomic number of the element?

d) find the group number of the element?

19) Based on the hints given,find out atomic number and sub shell electronic configuration of the elements.(symbols are not real)

i) A- period 3 group 17 ii) B- period 4 group 6

20) When the last electron of an atom was filled in 3rd sub shell, the sub shell electronic configuration was $3d^8$. answer the following questions related to this atom .

a) complete sub shell electronic configuration

b) atomic number

c) block

d) period number

e) group number

21) Pick out the wrong sub shell electronic configuration from those given below

1) $1S^2\ 2S^2\ 2P^7$ 2) $1S^2\ 2S^2\ 2P^2$ 3) $1S^2\ 2S^2\ 2P^5\ 3S^1$

4) $1S^2\ 2S^2\ 2P^6\ 3S^2\ 3P^6\ 3d^5\ 4s^1$ 6) $1S^2\ 2S^2\ 2P^6\ 3S^2\ 3P^6\ 3d^2\ 4s^2$

22) The element X in group 17 has 3 shell, if so,

a) write the sub shell electronic configuration of the element.

b) write the period number?

c) what will be the chemical formula of the compound formed, if the element X has reacted with Y of third period which contain one electron in the p sub shell?

23) The element Cu with atomic number 29 undergoes chemical reaction to form an ion with oxidation number +2.

a) write down the sub shell electronic configuration of this ion?

b) can this element shows variable valency? Why?

c) write down the chemical formula of one compound formed when this element react with chlorine ($_{17}Cl$)

24) The atomic number of Fe is 26

a) in which period the element Fe belongs in periodic table?

b) what is the oxidation state of Fe in Fe_2O_3?

c) write down sub shell electronic configuration of this ion?

25) In some elements the last electrons are filled in penultimate sub shell

a) this type of elements are commonly known as……?

b) write any two properties of this group elements?

26) The outermost sub shell electronic configuration of an element is $3d^5\ 4s^2$.

a) write down complete sub shell electronic configuration of this element

b) what is the atomic number of the element?

c) find its period and block?

d) why this element shows different oxidation state?

27) The sub shell electronic configuration of X^{3+} is $1S^2\ 2S^2\ 2P^6\ 3S^1$

a) find atomic number of element x?

b) in which block element belongs to?

28) The electronic configuration of an element ends as $2p^6$

a) how many shells have this element?

b) what is the valency of the element?

c) what is the group and period of the element?

29) The sub shell electronic configuration of A^{3+} ion is $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^3$

a) Find atomic number of the element A?

b) write sub shell electronic configuration of the element A?

c)write any two properties of the group in which the element belongs?

30) the electronic configuration of some elements are given below

A- $1s^2\ 2s^2$

B- $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^2\ 4s^2$.

C- $1s^2\ 2s^2\ 2p^5$

a) what are the possible oxidation state of element B?

b) write the chemical formula of the compound, which A & C are reacted?

31) Pick out the colored compound from the given bracket

(KCl, $K_2Cr_2O_7$, KNO_3, $KClO_3$)

32) two electronic configuration of element A (symbol is not real) given below

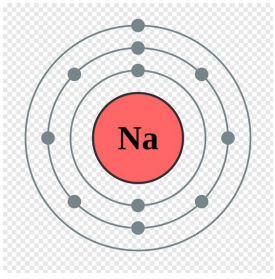
$1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^1$ $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^1$

a) identify the correct electronic configuration?

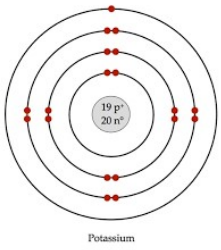
b) write the period in witch the element is present in the periodic table?

c) consider another element C which sub shell configuration $1s^2\ 2s^2\ 2p^6\ 3s^1$.In which among the atoms A&C the attraction of nucleus toward the outermost electron is more reactive?

33) Bohr models of two atom are given.



A



B

a) What is the atomic number of A?

b) write the sub shell electronic configuration of atom B?

34) CuCl and $CuCl_2$ are the two compounds of copper.

a) identify the copper ions in each compounds?

b) write the valency of the copper in these compounds?

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c) write sub shell electronic configuration of Cu^{3+} ions?

d) find group and period of copper? (atomic umber=29)

35) match the following.

Element	Outermost electronic configuration	Property
s	$3p^5$	Majority of the compounds are colored
p	$3d^4\ 4s^2$	It include lnthanoids and actinoids
d	$4f^1\ 3d^1\ 6s^2$	Small atomic radius in period
f	$3s^1$	High electronegativity.

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