ATTINGAL EDUCATIONAL DISTRICT

STANDARD 10

SUBJECT : **CHEMISTRY**

UNIT 1 : PERIODIC TABLE AND ELECTRONIC CONFIGURATION

Worksheet : 1

Activity 1

Pick out the wrong electronic configuration and correct them.

a) $1s^2\ 2s^2\ 2p^1$
b) $1s^2\ 2s^2\ 2p^6\ 3s^1$
c) $1s^2\ 2s^2\ 2p^7$
d) $1s^2\ 2s^2\ 2p^5\ 3s^1$
e) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^2$
f) $1s^2\ 2s^1\ 2p^2$

Activity 2

The outermost subshell electronic configuration of an element is $3s^2\ 3p^5$

a) Write the complete subshell electronic configuration
b) Find the atomic number of the element
c) Write the subshell electronic configuration using the symbol of nearest noble gas

Activity 3

The subshell electronic configuration of an element 'X' is given below. (Symbol is not real)

X - $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^9\ 4s^2$

a) Find the total number of electrons in the atom
b) Write the atomic number
c) Check whether the above configuration is right or wrong
d) If wrong, correct it and justify your answer

Activity 4

My last electron fills in d subshell
I have 5 electrons in d subshell
I have 7 subshells totally
I belong to d block

a) Complete the given table and find whom am I

Subshell electronic configuration	
Atomic number	
Subshell electronic configuration in short form	
Element	
Symbol	

b) If this element undergoes chemical reaction to form an ion with oxidation number +2, then write the symbol of ion and subshell electronic configuration of the ion

Activity 5

The sum of the oxidation numbers of the elements of a compund is Zero

Oxidation state Cl = -1

Oxidation state O= -2

Atomic Number Fe=26, Mn=25

Complete the table using the hints given above

Compound	Oxidation State (Fe/Mn)	Symbol of Ion	Subshell Electronic Configuration
$FeCl_2$	+2	Fe^{2+}	$1s^2\,2s^2\,2p^6\,3s^2\,3p^6\,3d^6$
$FeCl_3$	**---(A)---**	**---(B)---**	**---(C)---**
$MnCl_2$	+2	**---(D)---**	$1s^2\,2s^2\,2p^6\,3s^2\,3p^6\,3d^5$
MnO_2	**---(E)---**	**---(F)---**	**---(G)---**
Mn_2O_7	+7	Mn^{7+}	**---(H)---**
Mn_2O_3	**---(I)---**	**---(J)---**	**---(K)---**

Activity 6

Find the odd one

a) Transition element are d block elements

b) In transition elements last electrons are filled up in penultimate shell

c) Transition elements shows variable oxidation state

d) Transition elements are known as representative elements

e) Transition elements form coloured compounds

Activity 7

Complete the following table. (Symbols are not real)

Element	Subshell Electronic Configuration	Subshell in which last electron enters	Does it receive or donate electron?	Valency	Compound formation
$_{11}$**A**	$1s^2\ 2s^2\ 2p^6\ 3s^1$	s	donate	1	Compound formed between A & X Valency of A – 1 Valency of X – 2 A^1X^2 --> A_2X_1 (after interchanging valency) Formula - A_2X
$_{12}$**B**	----------	----------	----------	----------	Compound formed between B & Y ----------
$_{16}$**X**	----------	----------	receive	----------	Compound formed between X & B ----------
$_{17}$**Y**	----------	----------	----------	----------	Compound formed between Y & A ----------