

# ATTINGAL EDUCATIONAL DISTRICT

STANDARD 10

SUBJECT : CHEMISTRY

UNIT 1 : PERIODIC TABLE AND ELECTRONIC CONFIGURATION

Worksheet : 1

Answer Key

## Activity 1

Wrong		Correct
c) $1s^2 2s^2 2p^7$	----->	$1s^2 2s^2 2p^6 3s^1$
d) $1s^2 2s^2 2p^5 3s^1$	----->	$1s^2 2s^2 2p^6$
f) $1s^2 2s^1 2p^2$	----->	$1s^2 2s^2 2p^1$

## Activity 2

- a)  $1s^2 2s^2 2p^6 3s^2 3p^5$
- b) 17
- c)  $[\text{Ne}]3s^2 3p^5$

## Activity 3

- a) 29
- b) 29
- c) Wrong
- d)  $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^1$

Completely filled configuration ( $d^{10}$ ) or half filled configuration ( $d^5$ ) of this subshell is more stable than others.

## Activity 4

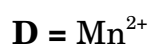
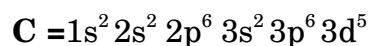
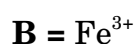
a)

Subshell electronic configuration	$1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^2$	OR	$1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^1$
Atomic number	25		24
Subshell electronic configuration in short form	$[\text{Ar}]3d^5 4s^2$		$[\text{Ar}]3d^5 4s^1$
Element	Manganese		Chromium
Symbol	Mn		Cr

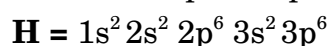
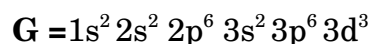
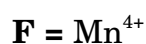
- b)  $\text{Mn}^{2+}, 1s^2 2s^2 2p^6 3s^2 3p^6 3d^5$  OR  $\text{Cr}^{2+}, 1s^2 2s^2 2p^6 3s^2 3p^6 3d^4$

### Activity 5

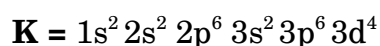
$$A = +3$$



$$E = +4$$



$$I = +3$$



### Activity 6

d) **Incorrect statement:** Transition elements are known as representative elements

### Activity 7

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	donates	1	Formula - $A_2X$
$_{12}B$	$1s^2 2s^2 2p^6 3s^2$	s	donates	2	Compound formed between B & Y Valency of B – 2 Valency of Y – 1 $B^2 Y^1 \rightarrow B_1 Y_2$ (after interchanging valency) Formula - $BY_2$
$_{16}X$	$1s^2 2s^2 2p^6 3s^2 3p^4$	p	receives	2	Compound formed between X & B Valency of B – 2 Valency of X – 2 $B^2 X^2 \rightarrow B_2 X_2$ (after interchanging valency) Formula - $BX$
$_{17}Y$	$1s^2 2s^2 2p^6 3s^2 3p^5$	p	receives	1	Compound formed between Y & A Valency of A – 1 Valency of Y – 1 $A^1 Y^1 \rightarrow A_1 Y_1$ (after interchanging valency) Formula - $AY$