CHEMISTRY

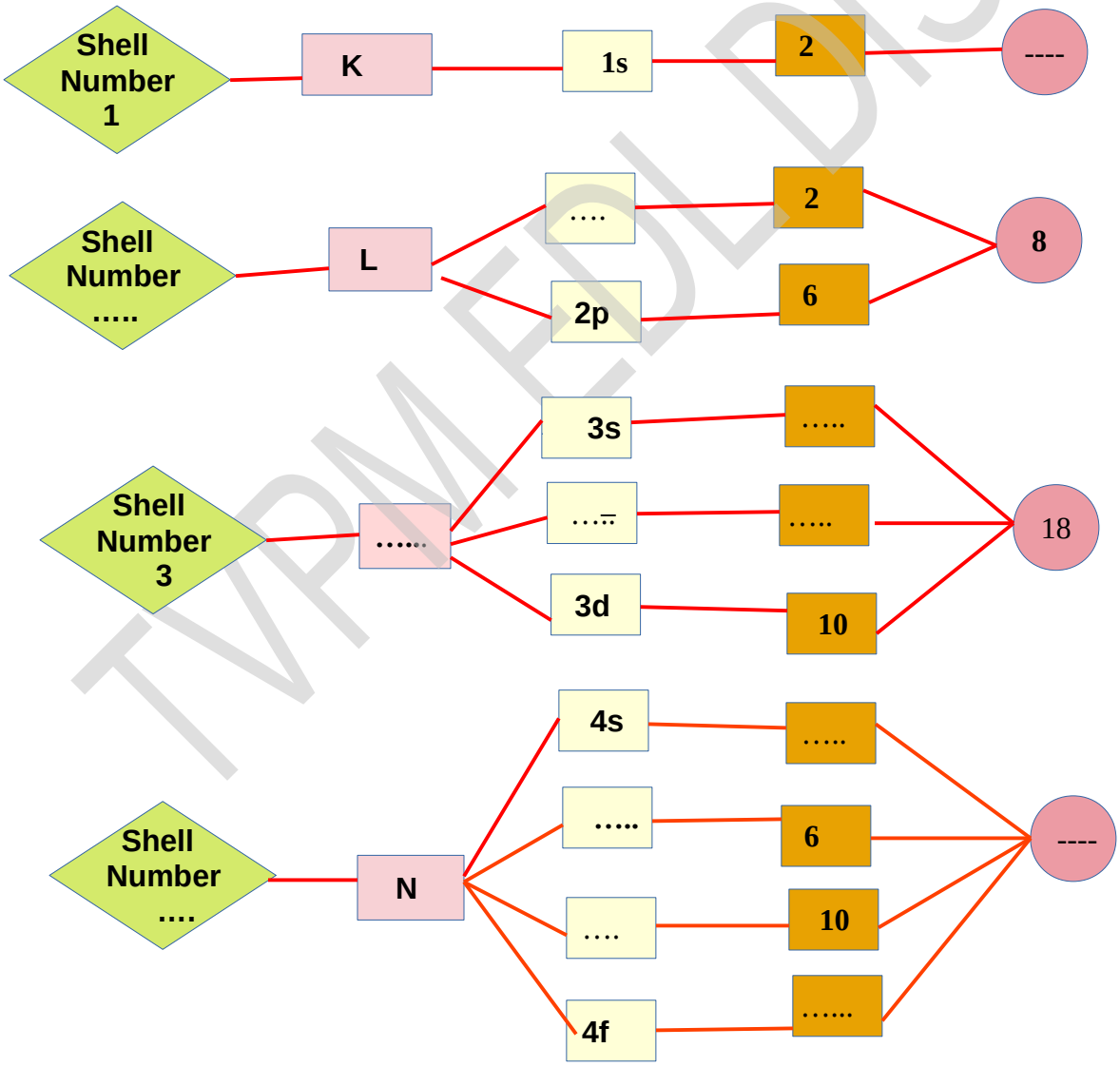
THIRUVANANTHAPURAM EDUCATIONAL DISTRICT

WORK SHEET 1

WS2CH101(E)

STANDARD X

1.Complete suitably:



2021-22

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2. Science diary of Sonu is given. Analyse it and answer the following questions:

> **The electrons are filled in subshells in the increasing order of their energies.**

a)Arrange the given subshells in the increasing order of their energies?
(3p, 2s, 3s, 2p, 3d, 4s, 1s)

b)Which among the following subshells are not possible?
(1s, 1p, 2s, 3d, 3f)

c) Write the maximum number of electrons that can be accommodated in d subshell?

3.Short form electronic configuration of some elements are given below
X - [Ne] $3s^2$
Y - [Ar] $4s^1$
Z – [Ar] $3d^3$ $4s^2$

a. Write the complete subshell electronic configuration of element X?

b. Which one of them forms coloured compounds?

c. Find the group number and period of element Y?

4.The outer electronic configuration of Mn is $3d^5$ $4s^2$

a) Write the complete electronic configuration of this element?

b)What is the oxidation state of Mn in MnO_2?

c) Write the subshell electronic configuration of Mn ions in MnO_2?

d)What will be the formula of the compound if Mn^{+2} combines with chlorine?

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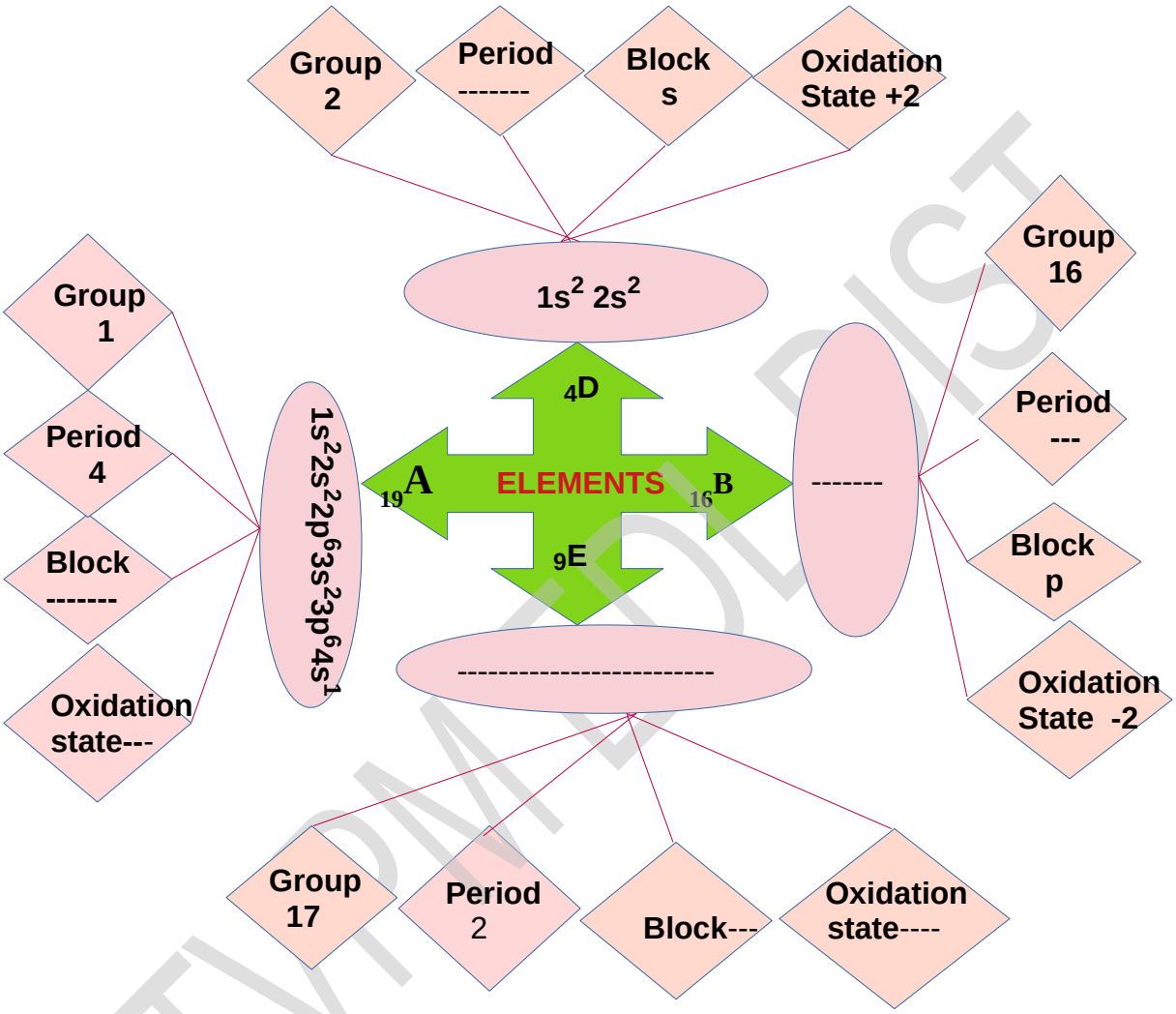
5.Complete it suitably and answer the following questions:(Symbols are not real)



a)In which blocks these elements come under and what they are commonly known?

b) What will be the formula of the compound if B reacts with D?

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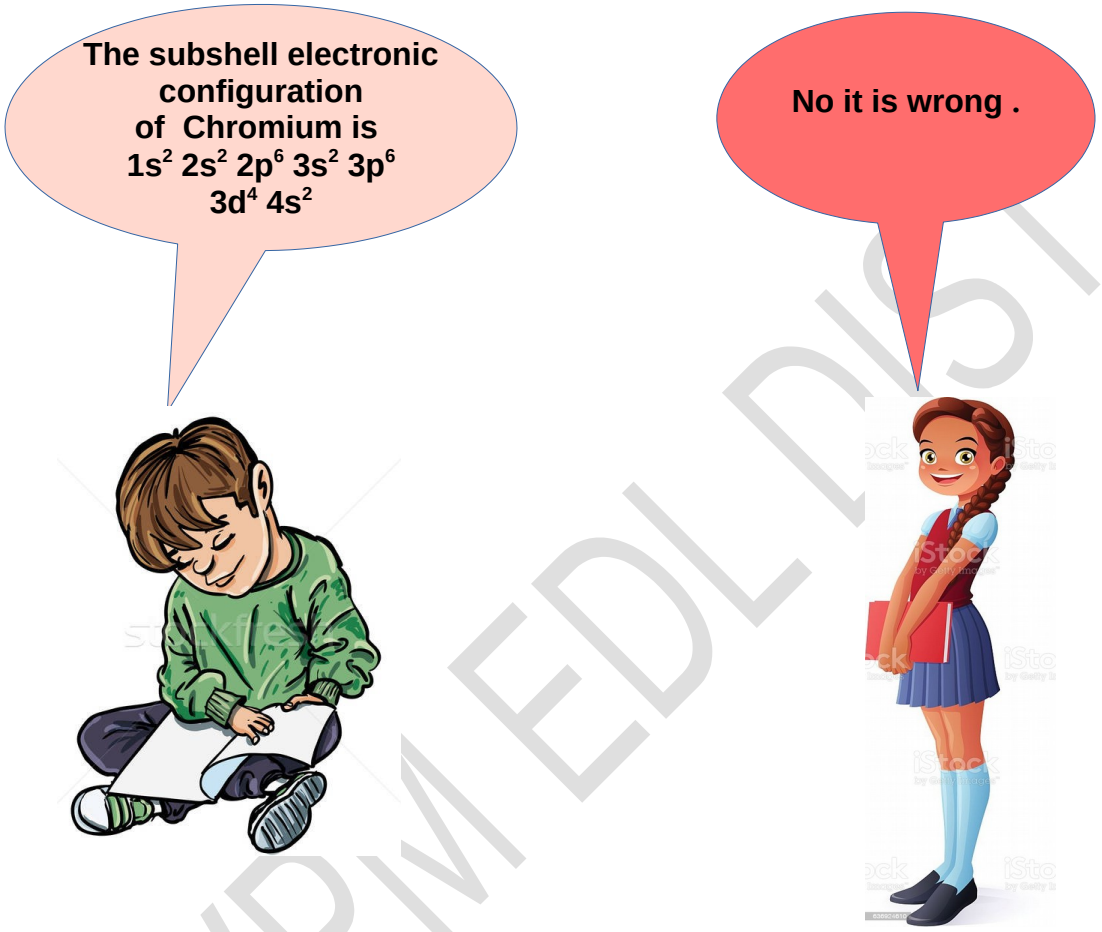
6.Analyse the given conversation and answer the following questions:



a) From the following choose the correct electronic configuration of Chromium with atomic number 24

i)$1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^5\ 4s^1$
ii)$1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^6$
iii)$1s^2\ 2s^{\ 2}\ 2p^6\ 3s^2\ 3p^6\ 3d^4\ 4s^2$
iv)$1s^2\ 2s^{\ 2}\ 2p^6 3s^2\ 3p^6\ 3d^7$

b) Justify your answer?

c) Write the subshell electronic configuration of copper?
(atomic number 29)

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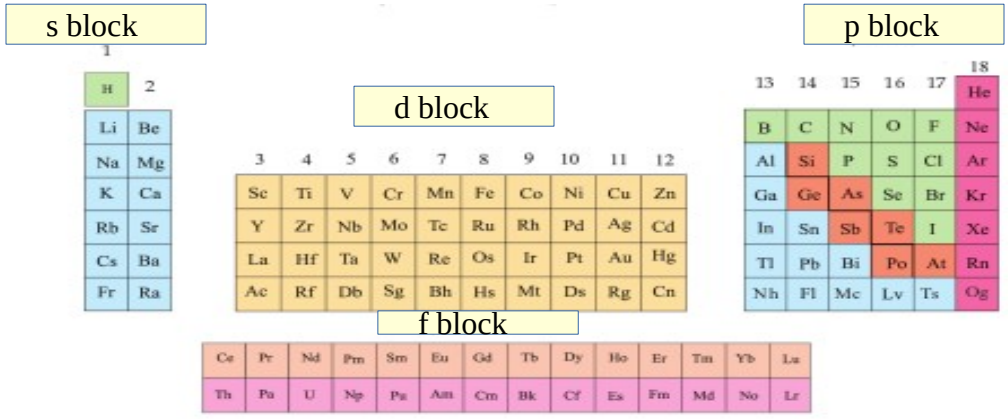
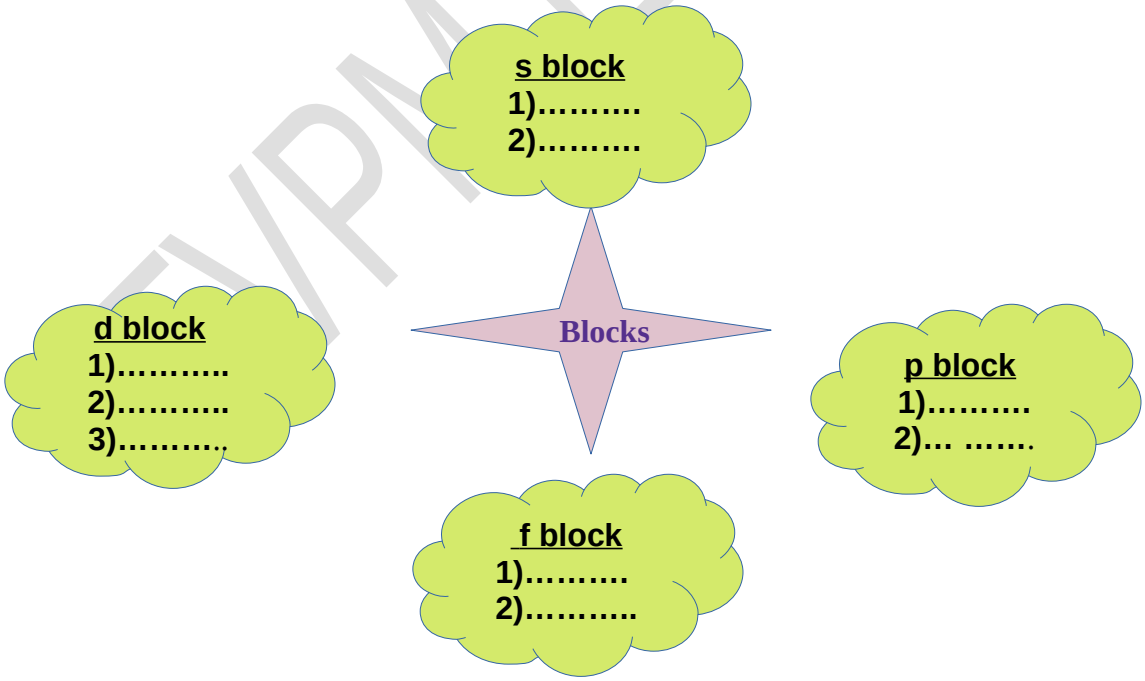
7.Based on the subshell electronic configuration, elements are classified in to four blocks s, p d and f . Common characteristics of s, p, d, f are given below. Arrange them suitably.



1)The last electron filled in the penultimate shell.
2)Less ionisation energy
3)Most of them are used in petroleum industry
4) forms ionic bonds
5) Transition elements
6)High ionisation energy
7)last electrons are filled in the antipenultimate shell.
8) high electronegativity
9)Most of them are coloured



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8.Find the hidden elements from the given puzzle using the following hints given below

A	F	L	U	O	R	I	N	E	B
S	D	M	L	E	C	T	Q	B	N
F	G	K	N	E	O	N	X	R	O
R	B	E	W	Q	P	J	M	C	X
A	U	K	T	E	P	P	Q	Y	Y
N	R	L	U	Z	E	O	X	R	G
C	H	N	T	Y	R	K	X	C	E
I	B	F	H	K	I	C	B	J	N
U	Y	X	I	T	E	M	S	R	B
M	A	G	N	E	S	I	U	M	T

Vertical

a)The highly electropositive element.
b)d block element.
c)The element shows -2 oxidation state.

Horizontal

a)Highly electronegative element
b)The element shows +2 oxidation state.
c)An inert gas.