CHEMISTRY ONLINE
TUITION

Phone: +442081445350

www.chemistryonlinetuition.com

Email:asherrana@chemistryonlinetuition.com

CHEMISTRY

MULTIPLE CHOICE - 4

ATOMIC STRUCUTRE

Atomic Structure - 4

1) Helping Concept

There is a large increse from IE_4 to IE_5. Therefore, M is likely a Group IV element. Hence, M forms MCl_4 on reacting with Cl_2.

2) Helping Concept

$_{22}Ti^{4+}$

$Number$ of electrons = 22 – 4 = 18

3) Helping Concept

$Second\ I.E.is\ defined\ as\ the\ energy\ required\ (endot-hermic) to\ remove\ one\ mole\ of\ electrons\ from\ one\ mole\ of\ gaseous\ M^{+} ion\ to\ form\ one\ mole\ of\ gaseous\ M^{2+} ions.$

A: $First\ I.E + Second\ I.E.$

C: $\Delta H^{\ominus} should\ be\ positive.$

4) Helping Concept

The atomic number of N is 7. In a neutral atom, there would be 7 electrons and the electronic configuration is $1s^2 2s^2 2p^3$. The 3 electrons in the 2p orbital are singly filled.

5) Helping Concept

From the periodic table, gallium $-$ 68 may be represented as $^{68}_{31}$Ga.

Hence, number of neutron $= 68 - 31 = 37$.

6) Helping Concept

Particles	proton	neutron	electron
H	1	0	
D	1	1	
N	7	7	
O	8	8	
D_3O^+	3×1+8= 11	3×1+8=11	11-1=10
H_3O^+	3×1+8= 11	0+8=8	11-1=10
NH_2^-	7+2×1= 9	7+0=7	9+1=10
OD^-	8+1=9	8+1=9	9+1=10

7) Helping Concept

In the reactions, both O_2 and Xe ionise to give O_2^+ and Xe^+ respectively.

They should have similar first ionisation energy.

Note: This is similar to saying that both O_2 and Xe 'belongto the same group' and they form similar ionic compunds.

I am Sorry !!!!!

8) Helping Concept

The energy level of a 2p orbital is higher than that of a 2s orbital.

9) Helping Concept

$Ne(g) \rightarrow Ne^{+}(g) + e^{-}$

From the data booklet.

$L = 6.02 \times 10^{23} mol^{-1}$

= number of particles in 1 mol

Since 1 mol of electron is removed to ionise 1 mol of Ne atoms

(from the equation).

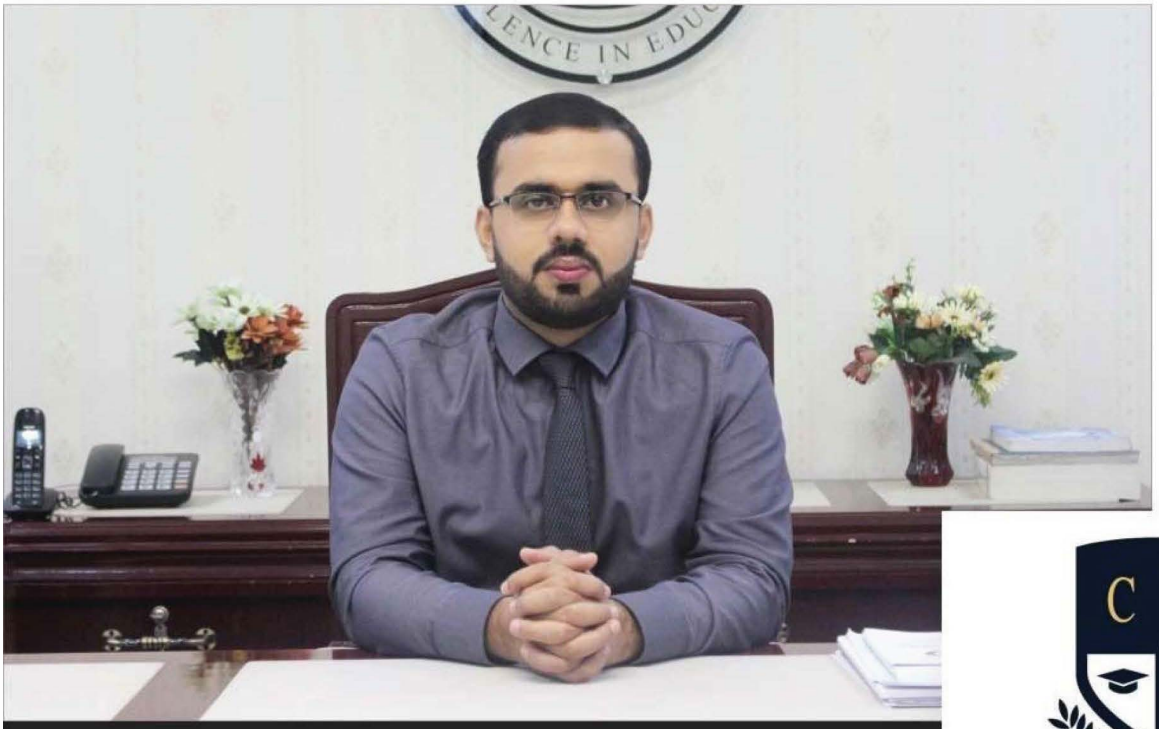
number of electron removed

$= (1.0 \times 10^{-6} mol^{-1}) \times (6.02 \times 10^{23} mol^{-1})$

10) Helping Concept

Tor an element before the transition elements in the 4th period,

the 3d orbital has higher energies than hte 4s orbital. However, for the transition elements in the 4th period, the 3d orbital is at lower energies than the 4s orbital.



DR. ASHAR RANA

M.B.B.S / MS. CHEMISTRY

CHEMISTRY ONLINE TUITION

Phone: +442081445350
www.chemistryonlinetuition.com
Email: asherrana@chemistryonlinetuition.com

- Founder & CEO of Chemistry Online Tuition Ltd.
- Completed Medicine (M.B.B.S) in 2007
- Tutoring students in UK and worldwide since 2008
- CIE & EDEXCEL Examiner since 2015
- Chemistry, Physics, Math's and Biology Tutor

CONTACT INFORMATION FOR **CHEMISTRY ONLINE TUITION**

- UK Contact: 02081445350
- International Phone/WhatsApp: 00442081445350
- Website: www.chemistryonlinetuition.com
- Email: asherrana@chemistryonlinetuition.com

Address: 210-Old Brompton Road, London SW5 OBS, UK