

Extended or Long Form of the Periodic Table

IA

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IVB

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VIB

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VII B

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VIII

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IIIB

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IIB

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IIIA

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IVA

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VIA

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VIIA

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(18)

Metals

Non metals

Metalloids

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Period

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6.940

22.990

24.305

39.098

87.62

223

H

Li

Na

K

Rb

Cs

Fr

Hydrogen

Lithium

Sodium

Potassium

Rubidium

Cesium

Francium

4

12

20

38

56

88

226

Be

Mg

Ca

Sr

Ba

Ra

Beryllium

Magnesium

Calcium

Strontium

Barium

Radium

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PERIODS

[illegible]

s-BLOCK		
1s	1	2
2s	Li	Be
3s	Na	Mg
4s	K	Ca
5s	Rb	Sr
6s	Cs	Ba
7s	Fr	Ra

H

d-BLOCK													
	3	4	5	6	7	8	9	10	11	12			
3d	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn			
4d	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd			
5d	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg			
6d	Ac	Rf	Db	Sg	Bh	Hs	Mt	Ds	Uuu	Uub			

p-BLOCK											
	13	14	15	16	17	18					
2p	B	C	N	O	F	Ne					
3p	Al	Si	P	S	Cl	Ar					
4p	Ga	Ge	As	Se	Br	Kr					
5p	In	Sn	Sb	Te	I	Xe					
6p	Tl	Pb	Bi	Po	At	Rn					
7p	—	Uuq	—	Uuh	—	—					

f-BLOCK													
Lanthanoids <i>4f</i>	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb
	Lu												
Actinoids <i>5f</i>	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No
	Lr												

APPENDIX

B

The Types of elements in the Periodic Table based on the orbitals that are being filled.

IMPORTANT FACTS TO REMEMBER

1. Lowest electronegativity : Cs
2. Highest electronegativity : F
3. Highest ionisation potential : He
4. Lowest ionisation potential : Cs
5. Lowest electron affinity : Noble gases
6. Highest electron affinity : Chlorine
7. Least electropositive element : F
8. Lowest m. pt. metal : Hg
9. Highest m. pt. and b. pt. metal : W (Tungsten)
10. Lowest m. pt. and b. pt. non metal : He
11. Notorious element : Hydrogen
12. Lightest element : Hydrogen
13. Smallest atomic size : H
14. Largest atomic size : Cs
15. Largest anionic size : I^-
16. Smallest cation : H^+
17. Most electropositive element : Cs
18. Element with electronegativity
next to Fluorine : Oxygen
19. Group containing maximum no.
of gaseous elements in periodic table : Zero group
20. Total number of gaseous elements :
in periodic table : 11 (H, N, O, F, Cl, He, Ne, Ar, Kr, Xe, Rn)
21. Total number of liquid elements
in periodic table : 6 (Ga, Br, Cs, Hg, Fr, Uub)
22. Liquid element of radioactive nature : Fr

23.	Total number of radioactive elements in periodic table	:	25
24.	Volatile d block elements	:	Zn, Cd, Hg, Uub
25.	Element containing no neutron	:	H
26.	Most abundant element on earth	:	Oxygen
27.	Most abundant metal on earth	:	Al
28.	Element having maximum tendency for catenation	:	Carbon
29.	Non metal having highest m. pt., b.pt.	:	Carbon (diamond)
30.	Metals showing highest oxidation number	:	Os (+8), Ru
31.	Most electrovalent compound	:	CsF
32.	Most stable carbonate	:	Cs ₂ CO ₃
33.	Strongest alkali	:	CsOH
34.	Strongest basic oxide	:	Cs ₂ O
35.	Best electricity conductor among metals	:	Ag
36.	Best electricity conductor among non metals	:	graphite
37.	Most poisonous element	:	Pu (Plutonium)
38.	Liquid non metals	:	Br
39.	Element kept in water	:	Phosphorous
40.	Elements kept in kerosene	:	IA group element (except Li)
41.	Elements sublime on heating	:	I ₂
42.	Noble metals	:	Au, Pt etc.
43.	Amphoteric metal	:	Be, Zn, Al, Sn, Pb, Ga
44.	Metalloids elements	:	Si, As, Te, At, Ge, Sb
45.	Non metals having metallic lusture	:	Graphite, Iodine
46.	Heaviest naturally occurring element	:	Uranium
47.	Poorest conductor of electricity	:	Dimond

48.	Hardest naturally occurring element	:	Dimond
49.	Lightest solid metal	:	Li
50.	90% of Sun mass	:	Hydrogen
51.	Amphoteric oxides	:	BeO, Al_2O_3 , ZnO, PbO, PbO_2 , SnO, SnO_2 , Sb_2O_3 , As_2O_3 , Cr_2O_3 etc.
52.	Neutral oxides of non metals	:	NO, CO, H_2O , N_2O
53.	Dry bleacher	:	H_2O_2
54.	Dry ice	:	Solid CO_2
55.	Artificial explosive	:	TNT, RDX (Research Developed Explosive etc.)
56.	First noble prize of chemistry was given to	:	Vantt Haff
57.	Some isomorphous substances	:	$\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$, $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$, $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$
58.	Some effloroscent substances	:	$\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$, $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ etc.
59.	First man made element	:	Tc_{43} (Technicium)
60.	Smallest period	:	Ist (2 elements)
61.	Largest period in periodic table	:	6th (32 element)
62.	Largest group in periodic table	:	IIIB (32 element)
63.	Most abundant d-block metal	:	Fe
64.	Most abundant s-block metal	:	Ca
65.	Most stable element	:	Te
66.	Highest density (Metals)	:	Os, Ir
67.	Highest density (Non Metals)	:	Boron

IMPORTANT SCIENTISTS & THEIR CONTRIBUTIONS

- | | | |
|-----|------------------------|---|
| 1. | Dobereiner | Law of Triads |
| 2. | Fajans | Factors of polarisation. |
| 3. | Lavoisier | Father of chemistry, classified element into metals & non metals. |
| 4. | Glesspie - Nyholm | VSEPR Theory |
| 5. | Mendeleeef | Periodic classification of elements. |
| 6. | Mosley | Concept of atomic number, modern periodic law, modern periodic table |
| 7. | Newland | Law of octaves. |
| 8. | Slater | Screening constant, Geometry of molecules. |
| 9. | Schoomaker & Stevenson | Bond length depends on difference in electronegativity |
| 10. | Lewis and Kossel | Electronic theory - octet rule |
| 11. | Rang & Warner | Long form of modern periodic table |
| 12. | Ramsay | Introduced noble gases in periodic table, Argon was discovered. |
| 13. | Seaborg | Post-Uranic elements |
| 14. | Heitler and London | Valence bond theory. |
| 15. | Hund's rule | Distribution of electrons in atomic orbitals in a sub - shell. |
| 16. | Pauling | Concept of dipole moment, valence bond theory Hybridization, Electronegativity scale. |
| 17. | Sidgwick and powell | Hybridisation. |
| 18. | Hanny - Smith | Nature of bonds. |