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11th CHEMISTRY

ई- पाठशाला

रसायन विज्ञान

तत्त्वों का वर्गीकरण एवं गुणधर्मों में आवर्तिता



एकदम बेसिक से ...

25 सितंबर 2026 || 03:00 PM

अध्याय-03 | भाग-03

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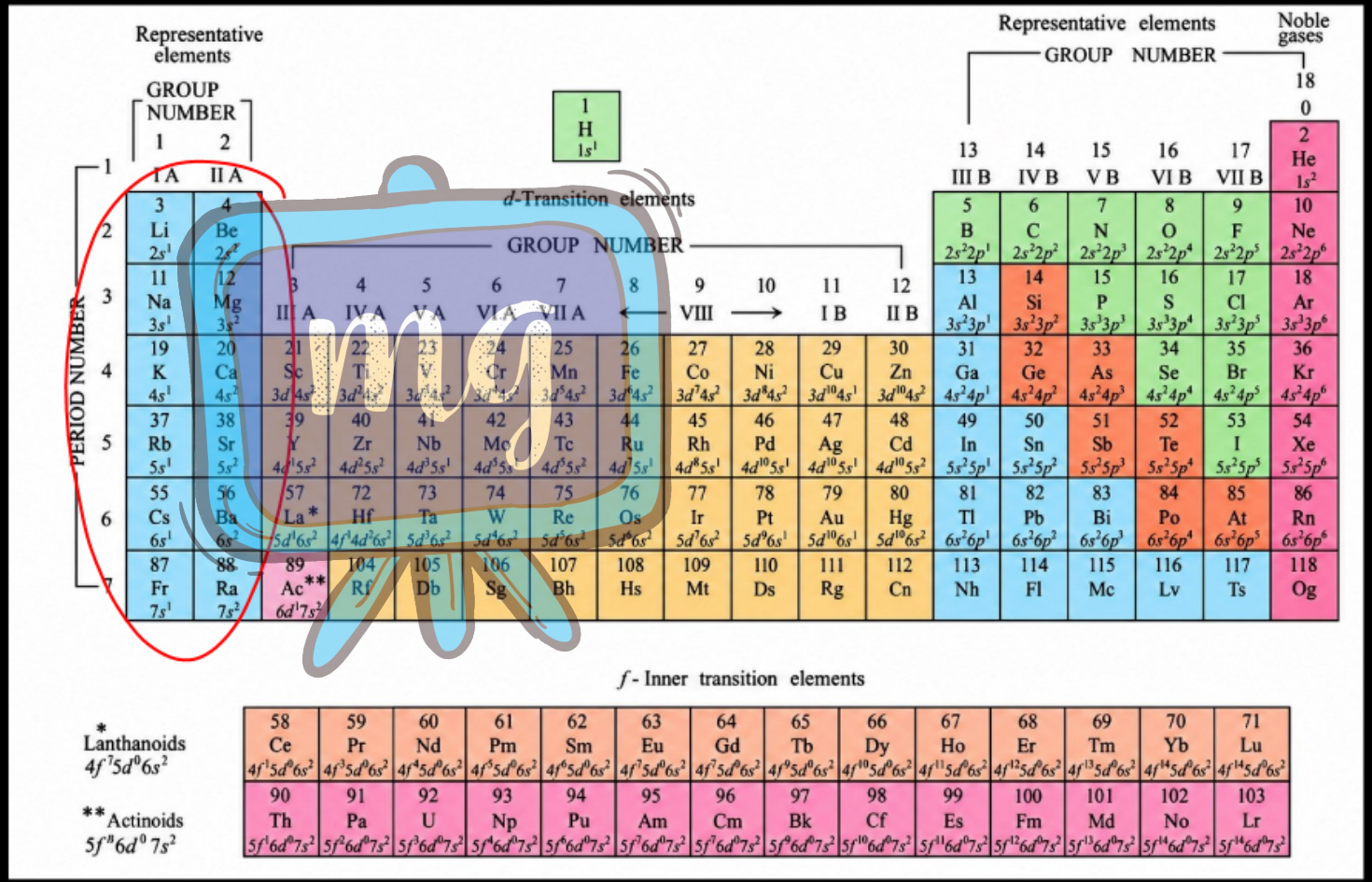
आज क्या पढेंगे ?

आवर्त सारणी का वर्तमान स्वरूप



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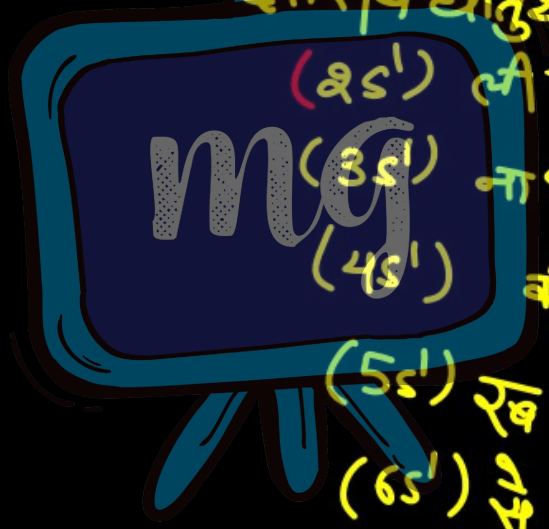
[8, 8, 18, 18, 32]

S-ब्लॉक तत्व

ns^1

G-1 → ns^1 — क्षारीय धातुयें

G-2 → ns^2 — क्षारीय मृदा धातुयें



3 1 Li Lithium 6.941	→ ली (2s¹)	4 2 Be Beryllium 9.012182	→ बेटी (2s²)
11 1 Na Sodium 22.98976928	→ ना (3s¹)	12 2 Mg Magnesium 24.3050	→ मांगे (3s²)
19 1 K Potassium 39.0983	→ पो (4s¹)	20 2 Ca Calcium 40.078	→ कार (4s²)
37 1 Rb Rubidium 85.4678	→ रु (5s¹)	38 2 Sr Strontium 87.62	→ सूर (5s²)
55 1 Cs Cesium 132.9054519	→ सी (6s¹)	56 2 Ba Barium 137.327	→ बाप (6s²)
87 1 Fr Francium (223)	→ फ्रांसियम (7s¹)	88 2 Ra Radium (226)	→ राजी (7s²)

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P-Block → ns^2np^{1-6}

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Group No.	13	14	15	16	17	18
	ns^2np^1	ns^2np^2	ns^2np^3	ns^2np^4	ns^2np^5	→ 2s²
						IE_1=2372.33 **He** Helium EN-
	IE_1=800.63 **B** Boron EN-2.04	IE_1=900.63 **C** Carbon EN-2.55	IE_1=1011.81 **N** Nitrogen EN-3.04	IE_1=1313.94 **O** Oxygen EN-3.44	IE_1=1681.04 **F** Fluorine EN-3.98	IE_1=2080.67 **Ne** Neon EN- → ns^2np^6
	IE_1=577.54 **Al** Aluminium EN-1.61	IE_1=786.52 **Si** Silicon EN-1.90	IE_1=1011.81 **P** Phosphorus EN-2.19	IE_1=999.59 **S** Sulfur EN-2.58	IE_1=1251.19 **Cl** Chlorine EN-3.16	IE_1=1520.57 **Ar** Argon EN-
	IE_1=578.84 **Ga** Gallium EN-1.81	IE_1=762.18 **Ge** Germanium EN-2.01	IE_1=947.67 **As** Arsenic EN-2.18	IE_1=941.00 **Se** Selenium EN-2.55	IE_1=1139.86 **Br** Bromine EN-2.96	IE_1=1350.76 **Kr** Krypton EN-
	IE_1=558.3 **In** Indium EN-1.78	IE_1=708.58 **Sn** Tin EN-1.96	IE_1=834.58 **Sb** Antimony EN-2.1	IE_1=869.29 **Te** Tellurium EN-2.1	IE_1=1008.39 **I** Iodine EN-2.66	IE_1=1170.35 **Xe** Xenon EN-2.60
	IE_1=589.35 **Tl** Thallium EN-1.8	IE_1=715.52 **Pb** Lead EN-1.8	IE_1=703.94 **Bi** Bismuth EN-1.9	IE_1=812.42 **Po** Polonium EN-2.0	IE_1- **At** Astatine EN-2.2	IE_1=1037.07 **Rn** Radon EN-
	IE_1- **Nh** Nihonium EN-	IE_1- **Fl** Flerovium EN-	IE_1- **Mc** Moscovium EN-	IE_1- **Lv** Livermorium EN-	IE_1- **Ts** Tennessine EN-	IE_1- **Og** Oganesson EN-

- Metals
- Metalloids
- Non Metal
- Radio active

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B-family [G-13] [ns^2np^1] 8, 18, 18, 32

बैंगन $_5B$ = बोरॉन = $2s^2 2p^1$

आलू $_{13}Al$ = एल्यूमीनियम = $3s^2 3p^1$

गाजर $_{31}Ga$ = गैलियम = $4s^2 4p^1$

इन $_{49}In$ = इंडियम = $5s^2 5p^1$

थैला $_{81}Tl$ = थैलियम = $6s^2 6p^1$

नही $_{113}Nh$ = निहोनियम = $7s^2 7p^1$

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C-family $[ns^2np^2]$ (G-14)

8, 18, 18, 32, 32

कहे — $_{6}C$ = कार्बन — $2s^2 2p^2$

सीता — $_{14}Si$ = सिलिकॉन — $3s^2 3p^2$

जी — $_{32}Ge$ = जर्मेनियम — $4s^2 4p^2$

सुनो — $_{50}Sn$ = टिन — $5s^2 5p^2$

प्रभू — $_{82}Pb$ = लेड — $6s^2 6p^2$

फ्लय — $_{114}Fl$ = फ्लेरोवियम — $7s^2 7p^2$

mg

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N-family (G-15) (ns^2np^3)
8, 18, 18, 32, 32

नेपाल N_7 = नाइट्रोजन = $2s^2 2p^3$

पाकिस्तान P_{15} = फास्फोरस = $3s^2 3p^3$

आस्ट्रेलिया As_{33} = आर्सेनिक = $4s^2 4p^3$

सब Sb_{51} = एन्टीमनी = $5s^2 5p^3$

बिरजारी Bi_{83} = बिस्मथ = $6s^2 6p^3$

मकाऊ Mc_{115} = मोस्कोवियम = $7s^2 7p^3$

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O-family (G-16) ns^2np^4

8, 18, 18, 32, 32

ऑक्सीजन $_8O$ ऑक्सीजन $(2s^2 2p^4)$

सल्फर $_{16}S$ सल्फर $(3s^2 3p^4)$

सेलेनियम $_{34}Se$ सेलेनियम $(4s^2 4p^4)$

टेलूरियम $_{52}Te$ टैलूरियम $(5s^2 5p^4)$

पोलोनियम $_{84}Po$ पोलोनियम $(6s^2 6p^4)$

लीवरमोरियम $_{116}Lv$ लीवरमोरियम $(7s^2 7p^4)$

mg

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G-17

F = family (Halogens) ns^2np^5

8, 18, 18, 32, 32

फिर	$_{9}F$	फ्लोरीन	$(2s^2 2p^5)$
कल	$_{17}Cl$	क्लोरीन	$(3s^2 3p^5)$
बाहर	$_{35}Br$	ब्रोमीन	$(4s^2 4p^5)$
आयी	$_{53}I$	आयोडीन	$(5s^2 5p^5)$
आंटी	$_{85}At$	एस्टाटीन	$(6s^2 6p^5)$
टैनेसाइन	$_{117}Ts$	टैनेसाइन	$(7s^2 7p^5)$

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Noble family (नोबेल गैस) (ज-18)

(ns²np⁶) [8, 18, 18, 32, 32]

हीना $_{2}He \rightarrow 1s^2$ (हीलियम)

नीना $_{10}Ne \rightarrow$ निऑन $(2s^2 2p^6)$

और $_{18}Ar \rightarrow$ ऑर्गन $(3s^2 3p^6)$

करीना $_{36}Kr \rightarrow$ क्रिप्टॉन $(4s^2 4p^6)$

X $_{54}Xe \rightarrow$ जिनॉन $(5s^2 5p^6)$

Ray $_{86}Rn \rightarrow$ रेडॉन $(6s^2 6p^6)$

होंगे $_{118}Og \rightarrow$ ओगेनेसन $(7s^2 7p^6)$

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d-block elements electronic configuration

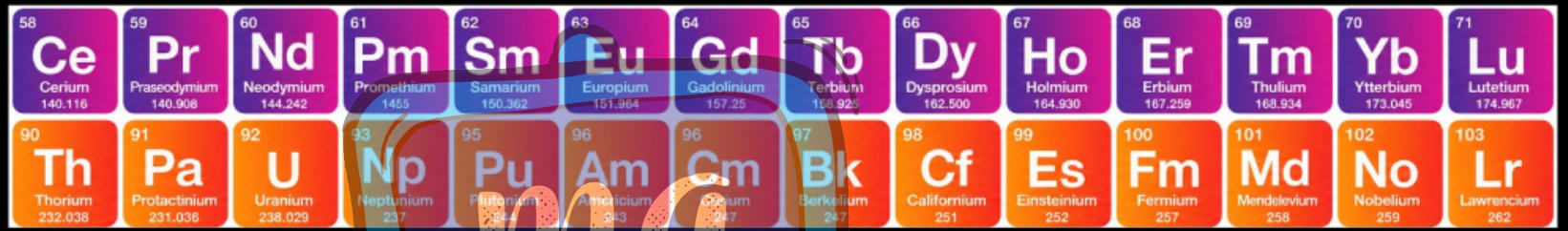
General electronic configuration $(n-1)d^{1\text{ to }10}\ ns^2$

21 **Sc** Scandium $[Ar]3d^1 4s^2$	22 **Ti** Titanium $[Ar]3d^2 4s^2$	23 **V** Vanadium $[Ar]3d^3 4s^2$	24 **Cr** Chromium $[Ar]3d^5 4s^1$	25 **Mn** Manganese $[Ar]3d^5 4s^2$	26 **Fe** Iron $[Ar]3d^6 4s^2$	27 **Co** Cobalt $[Ar]3d^7 4s^2$	28 **Ni** Nickel $[Ar]3d^8 4s^2$	29 **Cu** Copper $[Ar]3d^{10} 4s^1$	30 **Zn** Zinc $[Ar]3d^{10} 4s^2$
39 **Y** Yttrium $[Kr]4d^1 5s^2$	40 **Zr** Zirconium $[Kr]4d^2 5s^2$	41 **Nb** Niobium $[Kr]4d^4 5s^1$	42 **Mo** Molybdenum $[Kr]4d^5 5s^1$	43 **Tc** Technetium $[Kr]4d^5 5s^2$	44 **Ru** Ruthenium $[Kr]4d^7 5s^1$	45 **Rh** Rhodium $[Kr]4d^8 5s^1$	46 **Pd** Palladium $[Kr]4d^{10} 5s^0$	47 **Ag** Silver $[Kr]4d^{10} 5s^1$	48 **Cd** Cadmium $[Kr]4d^{10} 5s^2$
57 **La** Lanthanum $4f^0\ 5d^1\ 6s^2$	72 **Hf** Hafnium $4f^{14}5d^2 6s^2$	73 **Ta** Tantalum $4f^{14}5d^3 6s^2$	74 **W** Tungsten $4f^{14}5d^4 6s^2$	75 **Re** Rhenium $4f^{14}5d^5 6s^2$	76 **Os** Osmium $4f^{14}5d^6 6s^2$	77 **Ir** Iridium $4f^{14}5d^7 6s^2$	78 **Pt** Platinum $4f^{14}5d^9 6s^1$	80 **Au** Gold $4f^{14}5d^{10} 6s^1$	80 **Hg** Mercury $4f^{16}5d^{10} 6s^2$
89 **Ac** Actinium $5f^0\ 6d^1\ 7s^2$	104 **Rf** Rutherfordium $5f^{16}6d^2 7s^2$	105 **Db** Dubnium $5f^{16}6d^3 7s^2$	106 **Sg** Seaborgium $5f^{16}6d^4 7s^2$	107 **Bh** Bohrium $5f^{16}6d^5 7s^2$	108 **Hs** Hassium $5f^{16}6d^7 7s^2$	109 **Mt** Meitnerium $5f^{16}6d^7 7s^2$	110 **Ds** Darmstadtium $5f^{14}6d^8 7s^2$	111 **Rg** Roentgenium $5f^{16}6d^9 7s^2$	112 **Cn** Copernicium $5f^{16}6d^{10} 7s^2$

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f-block Elements



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Atomic Number	Name	Symbol	Electronic Ln
57	Lanthanum	La	$5d^1 6s^2$
58	Cerium	Ce	$4f^1 5d^1 6s^2$
59	Praseodymium	Pr	$4f^3 6s^2$
60	Neodymium	Nd	$4f^4 6s^2$
61	Promethium	Pm	$4f^5 6s^2$
62	Samarium	Sm	$4f^6 6s^2$
63	Europium	Eu	$4f^7 6s^2$
64	Gadolinium	Gd	$4f^7 5d^1 6s^2$
65	Terbium	Tb	$4f^9 6s^2$
66	Dysprosium	Dy	$4f^{10} 6s^2$
67	Holmium	Ho	$4f^{11} 6s^2$
68	Erbium	Er	$4f^{12} 6s^2$
69	Thulium	Tm	$4f^{13} 6s^2$
70	Ytterbium	Yb	$4f^{14} 6s^2$
71	Lutetium	Lu	$4f^{14} 5d^1 6s^2$

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Atomic Number	Name	Symbol	Electronic con M
89	Actinium	Ac	$6d^1 7s^2$
90	Thorium	Th	$6d^2 7s^2$
91	Protactinium	Pa	$5f^2 6d^1 7s^2$
92	Uranium	U	$5f^3 6d^1 7s^2$
93	Neptunium	Np	$5f^4 6d^1 7s^2$
94	Plutonium	Pu	$5f^6 7s^2$
95	Americium	Am	$5f^7 7s^2$
96	Curium	Cm	$5f^7 6d^1 7s^2$
97	Berkelium	Bk	$5f^9 7s^2$
98	Californium	Cf	$5f^{10} 7s^2$
99	Einstenium	Es	$5f^{11} 7s^2$
100	Fermium	Fm	$5f^{12} 7s^2$
101	Mendelevium	Md	$5f^{13} 7s^2$
102	Nobelium	No	$5f^{14} 7s^2$
103	Lawrencium	Lr	$5f^{14} 6d^1 7s^2$