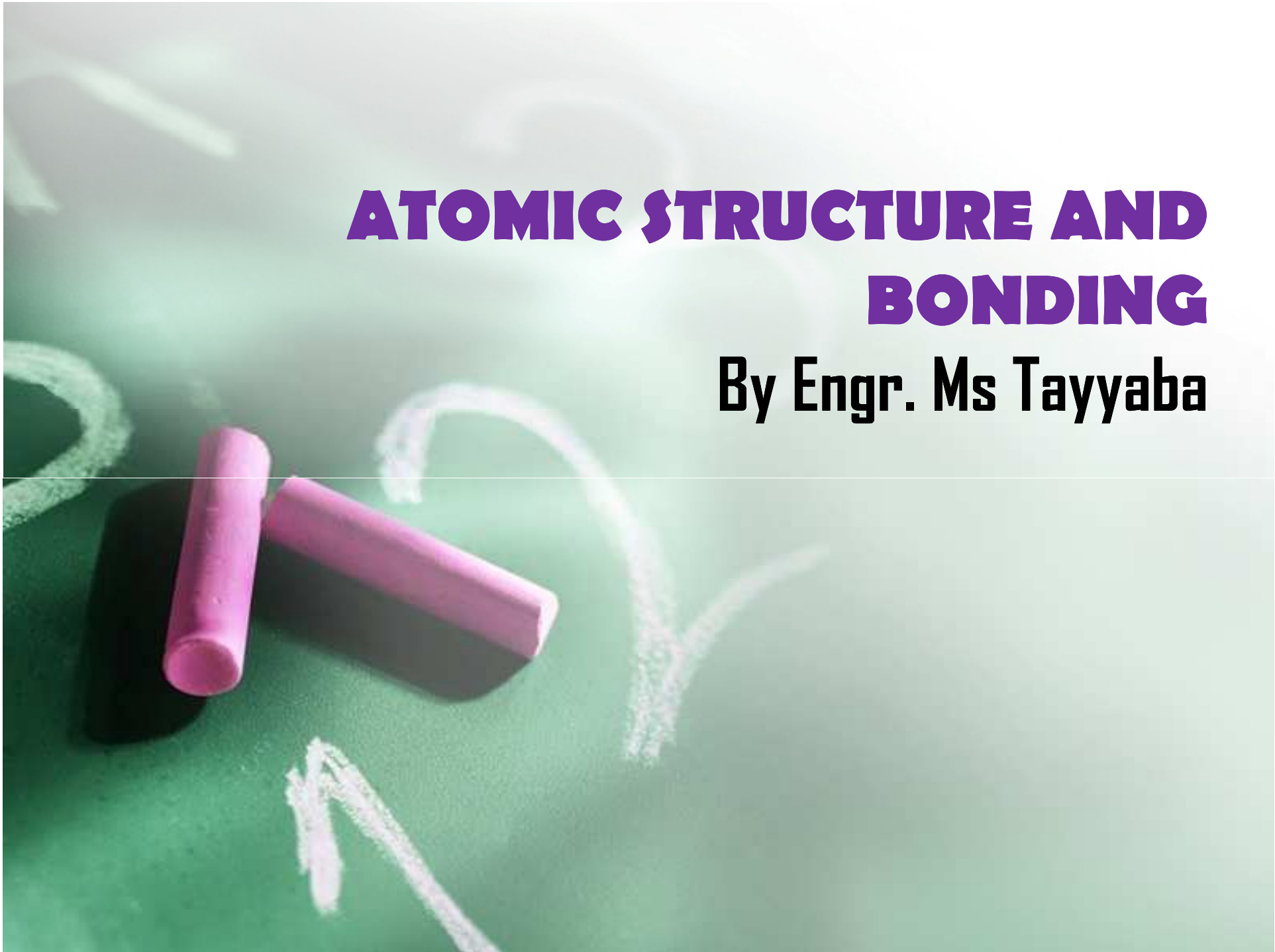


ATOMIC STRUCTURE AND BONDING

By Engr. Ms Tayyaba



Periodic Table of the Elements

1 IA	New Original																18 VIIIA	
1 H Hydrogen 1.00794																	2 He Helium 4.002602	
2 Li Lithium 6.941	3 Be Beryllium 9.012182											13 B Boron 10.811	14 C Carbon 12.0107	15 N Nitrogen 14.00674	16 O Oxygen 15.9994	17 F Fluorine 18.9984032	18 Ne Neon 20.1797	
3 Na Sodium 22.989770	4 Mg Magnesium 24.3050	3 IIIB	4 IVB	5 VB	6 VIB	7 VIIB	8 VIII	9 VIII	10 VIII	11 IB	12 IIB	13 Al Aluminum 26.981538	14 Si Silicon 28.0855	15 P Phosphorus 30.973761	16 S Sulfur 32.066	17 Cl Chlorine 35.453	18 Ar Argon 39.948	
4 K Potassium 39.0983	20 Ca Calcium 40.078	21 Sc Scandium 44.955910	22 Ti Titanium 47.867	23 V Vanadium 50.9415	24 Cr Chromium 51.9961	25 Mn Manganese 54.938049	26 Fe Iron 55.8457	27 Co Cobalt 58.933200	28 Ni Nickel 58.6934	29 Cu Copper 63.546	30 Zn Zinc 65.409	31 Ga Gallium 69.723	32 Ge Germanium 72.64	33 As Arsenic 74.92160	34 Se Selenium 78.96	35 Br Bromine 79.904	36 Kr Krypton 83.798	
5 Rb Rubidium 85.4678	38 Sr Strontium 87.62	39 Y Yttrium 88.90585	40 Zr Zirconium 91.224	41 Nb Niobium 92.90638	42 Mo Molybdenum 95.94	43 Tc Technetium (98)	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.90550	46 Pd Palladium 106.42	47 Ag Silver 107.8682	48 Cd Cadmium 112.411	49 In Indium 114.818	50 Sn Tin 118.710	51 Sb Antimony 121.760	52 Te Tellurium 127.60	53 I Iodine 126.90447	54 Xe Xenon 131.293	
6 Cs Cesium 132.90545	56 Ba Barium 137.327	57 to 71		72 Hf Hafnium 178.49	73 Ta Tantalum 180.9479	74 W Tungsten 183.84	75 Re Rhenium 186.207	76 Os Osmium 190.23	77 Ir Iridium 192.217	78 Pt Platinum 195.078	79 Au Gold 196.96655	80 Hg Mercury 200.59	81 Tl Thallium 204.3833	82 Pb Lead 207.2	83 Bi Bismuth 208.98038	84 Po Polonium (209)	85 At Astatine (210)	86 Rn Radon (222)
7 Fr Francium (223)	88 Ra Radium (226)	89 to 103		104 Rf Rutherfordium (261)	105 Db Dubnium (262)	106 Sg Seaborgium (266)	107 Bh Bohrium (264)	108 Hs Hassium (269)	109 Mt Meitnerium (268)	110 Ds Darmstadtium (271)	111 Rg Roentgenium (272)	112 Uub Ununbium (285)	113 Uut Ununtrium (284)	114 Uuq Ununquadium (289)	115 Uup Ununpentium (288)	116 Uuh Ununhexium (292)	117 Uus Ununseptium	118 Uuo Ununoctium

Atomic masses in parentheses are those of the most stable or common isotope.

Design Copyright © 1997 Michael Dayah (michael@dayah.com) <http://www.dayah.com/periodic/>

Note: The subgroup numbers 1-18 were adopted in 1984 by the International Union of Pure and Applied Chemistry. The names of elements 112-118 are the Latin equivalents of those numbers.

57 La Lanthanum 138.9055	58 Ce Cerium 140.116	59 Pr Praseodymium 140.90765	60 Nd Neodymium 144.24	61 Pm Promethium (145)	62 Sm Samarium 150.36	63 Eu Europium 151.964	64 Gd Gadolinium 157.25	65 Tb Terbium 158.92534	66 Dy Dysprosium 162.500	67 Ho Holmium 164.93032	68 Er Erbium 167.259	69 Tm Thulium 168.93421	70 Yb Ytterbium 173.04	71 Lu Lutetium 174.967
89 Ac Actinium (227)	90 Th Thorium 232.0381	91 Pa Protactinium 231.03688	92 U Uranium 238.02891	93 Np Neptunium (237)	94 Pu Plutonium (244)	95 Am Americium (243)	96 Cm Curium (247)	97 Bk Berkelium (247)	98 Cf Californium (251)	99 Es Einsteinium (252)	100 Fm Fermium (257)	101 Md Mendelevium (258)	102 No Nobelium (259)	103 Lr Lawrencium (262)

Metal

Nonmetal

Intermediate

Key

- 20 → Atomic number
- Cu → Symbol
- 63.54 → Atomic weight

		Metal										Intermediate		Nonmetal		Inert gases			
		IIA	III A	IV A	V A	VIII						IB	IIB	IIIA	IVA	VA	VI A	VII A	He
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
H	He	Li	Be	B	C	N	O	F	Ne	Na	Mg	Al	Si	P	S	Cl	Ar	K	Ca
39	86	39	86	72.64	72.64	14.007	15.999	16.999	18.998	58.933	58.933	26.982	28.086	30.974	31.972	32.959	34.962	35.962	36.966
Rb	Sr	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr	Rb	Sr
85.468	87.62	44.956	47.88	50.942	51.996	54.938	55.847	58.933	58.71	63.54	65.37	69.72	72.59	74.922	78.971	79.904	83.80	85.468	87.62
Cs	Ba	Rare earth series		Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe	Cs
132.91	137.34			91.22	92.91	95.94	98	101.07	102.91	106.4	107.87	112.40	114.82	118.69	121.75	127.46	126.905	131.29	132.91
Fr	Ra	Acti-nide series		Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn	Fr
223	226			178.49	180.95	183.85	186.2	190.2	192.2	195.09	196.97	200.59	204.37	207.19	208.98			222	223

← Electropositive elements: Readily give up electrons to become + ions. Electronegative elements: Readily acquire electrons to become - ions. →

Electropositive elements:
Readily give up electrons to become + ions.

Electronegative elements:
Readily acquire electrons to become - ions.