Chemistry Exam Information Sheet

Constant	Symbol	Value
Avogadro's number	N_A	6.023×10^{23} mol^{-1}
Gas constant	R	$0.082058 \frac{L \cdot atm}{K \cdot mol}$ or $0.083145 \frac{L \cdot bar}{K \cdot mol}$ or $8.3145 \frac{L \cdot kPa}{K \cdot mol}$ or $8.3145 \frac{J}{K \cdot mol}$
Dissociation constant for water	K_w	1.0×10^{-14} at 25°C
Rydberg constant	R_H	1.097×10^{7} m^{-1}
Rydberg constant (in energy units)		-2.18×10^{-18} J
mass of electron	m_e	9.109×10^{-31} kg
charge of electron	e	1.602×10^{-19} C
Faraday's constant	F	9.64853×10^{4} C mol^{-1}
Speed of light in a vacuum	c	3.00×10^{8} m sec^{-1}
Planck's constant	h	6.626×10^{-34} J sec

Differential rate laws	Integrated rate laws	Other Information
$-\frac{d[A]}{dt} = k[A]^0$	$[A]_t = -kt + [A]_0$	quadratic formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
$-\frac{d[A]}{dt} = k[A]^1$	$\ln[A]_t = -kt + \ln[A]_0$	Arrhenius equation: $k = Ae^{\frac{-E_a}{RT}}$
$-\frac{d[A]}{dt} = k[A]^2$	$\frac{1}{[A]_t} = kt + \frac{1}{[A]_0}$	Henderson-Hasselbalch eq'n: $pH = pK_a + \log\frac{[A^-]}{[HA]}$
		0.00°C = 273.15 K

THE PERIODIC TABLE of ELEMENTS

1 H 1.008																	2 He 4.003
3 Li 6.941	4 Be 9.012											5 B 10.81	6 C 12.01	7 N 14.01	8 O 16.00	9 F 19.00	10 Ne 20.18
11 Na 22.990	12 Mg 24.305											13 Al 26.98	14 Si 28.09	15 P 30.97	16 S 32.07	17 Cl 35.45	18 Ar 39.95
19 K 39.10	20 Ca 40.08	21 Sc 44.96	22 Ti 47.88	23 V 50.94	24 Cr 52.00	25 Mn 54.94	26 Fe 55.85	27 Co 58.93	28 Ni 58.69	29 Cu 63.55	30 Zn 65.39	31 Ga 69.72	32 Ge 72.59	33 As 74.92	34 Se 78.96	35 Br 79.90	36 Kr 83.80
37 Rb 85.47	38 Sr 87.62	39 Y 88.91	40 Zr 91.22	41 Nb 92.91	42 Mo 95.94	43 Tc (98)	44 Ru 101.1	45 Rh 102.9	46 Pd 106.4	47 Ag 107.9	48 Cd 112.4	49 In 114.8	50 Sn 118.7	51 Sb 121.8	52 Te 127.6	53 I 126.9	54 Xe 131.30
55 Cs 132.9	56 Ba 137.3	57 La * 138.9	72 Hf 178.5	73 Ta 180.9	74 W 183.8	75 Re 186.2	76 Os 190.2	77 Ir 192.2	78 Pt 195.1	79 Au 197.0	80 Hg 200.6	81 Tl 204.4	82 Pb 207.2	83 Bi 209.0	84 Po (210)	85 At (210)	86 Rn (222)
87 Fr (223)	88 Ra (226)	89 Ac ** (227)	104 Rf (257)	105 Db (260)	106 Sg (263)	107 Bh (262)	108 Hs (265)	109 Mt (266)	110 Ds (281)	111 Rg (280)	112 Cn (285)	113 Nh (284)	114 Fl (289)	115 Mc (288)	116 Lv (293)	117 Ts (294)	118 Og (294)

*	58 Ce 140.1	59 Pr 140.9	60 Nd 144.2	61 Pm (147)	62 Sm 150.4	63 Eu 152.0	64 Gd 157.3	65 Tb 158.9	66 Dy 162.5	67 Ho 164.9	68 Er 167.3	69 Tm 168.9	70 Yb 173.0	71 Lu 175.0
**	90 Th 232.0	91 Pa (231)	92 U 238.0	93 Np (237)	94 Pu (242)	95 Am (243)	96 Cm (247)	97 Bk (247)	98 Cf (249)	99 Es (254)	100 Fm (253)	101 Md (256)	102 No (254)	103 Lr (257)