Instructions

– Fill in the exam version as the "Key ID" in the top left corner of your scantron. (Your exam version is listed on the bottom of this page– A, B, C, or D.)
– Fill in your student ID number in the appropriate section on your scantron.
– Fill in your name and any other information you would like in the appropriate area of the scantron.
– All Backpacks, Purses, Cell Phones, Textbooks, Notes, etc. should be placed at the front or sides of the classroom. (A cell phone on your person at any point during the exam will result in a zero on the exam.)
– Do not write any equations, or work out any problems on your scantron(this may be considered cheating).
– Be careful to check all answers and make sure mistakes on your scantron are properly erased before turning in your exam

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) How many inches are in 25.8 cm? 1) _____
A) 0.0984 in
B) 10.2 in
C) 0.10 in
D) 28.3 in
E) none of the above

2) The correct decimal representation of 9.2547×10^3 is: 2) _____
A) 9.2547
B) 9.3×10^3
C) 0.0092547
D) 9,254.7
E) none of the above

3) If 48.0 quarts of water has a mass of 100.0 lb, what is the volume in liters? 3) _____
A) 45.4 L B) 94.6 L C) 0.0454 L D) 0.0507 L E) 50.7 L

4) Ions are formed when atoms 4) _____
A) gain or lose protons
B) gain or lose electrons
C) gain or lose neutrons
D) two of these results in ion formation
E) None of these results in ion formation

5) What is 6.5 m converted to inches? 5) _____
A) 260 in B) 1700 in C) 255.9 in D) 39 in E) 1651 in

6) How would you classify sugar($C_{12}H_{22}O_{11}$)? 6) _____
A) mixture–homogeneous
B) pure substance–compound
C) pure substance–element
D) mixture–heterogeneous
E) none of the above

7) Determine the mass of an object that has a volume of 88.6 mL and a density of 9.77 g/mL. 7) _____
A) 1100 g B) 568 g C) 866 g D) 298 g E) 907 g

8) What is the chemical formula for the nitride ion? 8) _____

A) N^- B) NO^- C) N^{2-} D) N_2^{3-} E) N^{3-}

9) What is the name for aqueous HI? 9) _____

A) hydrogen iodide B) hydroiodic acid
C) iodic acid D) iodous acid

10) If an object has a density of 8.65 g/cm^3, what is its density in units of kg/m^3? 10) _____

A) 8.65×10^{-7} kg/m^3
B) 8.65×10^{-1} kg/m^3
C) 8.65×10^{3} kg/m^3
D) 8.65×10^{1} kg/m^3
E) 8.65×10^{-3} kg/m^3

11) What answer should be reported, with the correct number of significant figures, for the following calculation? $(433.621 - 333.9) \times 11.900$ 11) _____

A) 1.1868×10^3
B) 1.19×10^3
C) 1.186799×10^3
D) 1.187×10^3
E) 1.18680×10^3

12) Which is the correct chemical formula for the ion, Nitrate? 12) _____

A) NO_2^-
B) NO_3^-
C) CO_3^{2-}
D) N^{3-}
E) none of the above

13) What is the ionic charge for the lead ion in PbO_2? 13) _____

A) 4+
B) 1+
C) 2+
D) zero
E) none of the above

14) What is the systematic name for NiS? 14) _____

A) nickel sulfide
B) nickel(II) sulfite
C) nickel(II) sulfide
D) nickel(II) sulfate
E) none of the above

15) Which of the following is a homogenous mixture? 15) _____

A) Oxygen gas
B) Water with Ice in it
C) raisin bran
D) air
E) none of the above

16) Give the formula for calcium hydrogensulfate. 16) _____

A) $Ca(HSO_4)_2$ B) Ca_2HSO_4 C) $CaHSO_4$ D) $Ca_2(HSO_4)_2$

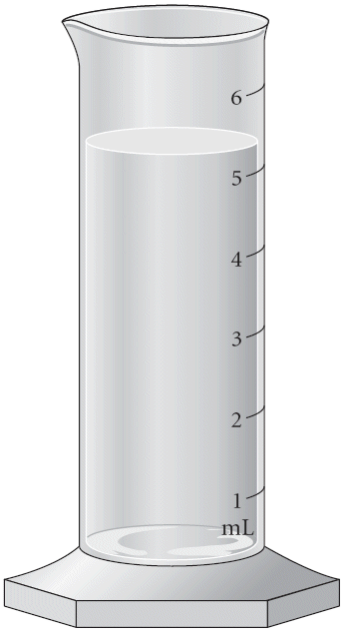
17) What is the correct formula for a potassium ion with 18 electrons? 17) _____

A) K^-
B) P^-
C) K^+
D) P^+
E) none of the above

18) Which is the correct chemical formula for the ion, Hydroxide? 18) _____

A) O_3^-
B) H^-
C) OH^-
D) CO_3^{2-}
E) none of the above

19) Read the water level with the correct number of significant figures. 19) _____



A) 5.320 mL B) 5 mL C) 5.3200 mL D) 5.3 mL E) 5.32 mL

20) How many mm are in 3.20 cm? 20) _____

A) 3.20×10^{1} mm
B) 3.20×10^{-1} mm
C) 3.20×10^{2} mm
D) 3.20×10^{3} mm
E) 3.20×10^{-2} mm

21) What is the chemical symbol for the following information? 21) _____

$p^+ = 12$ $n^\circ = 14$ $e^- = 10$

A) Si^{4+} B) Ne C) Si D) Mg^{2+} E) Mg

22) Determine the name for $TiCO_3$. Remember that titanium forms several ions. 22) _____

A) titanium carbonite
B) titanium (I) carbonate
C) titanium (II) carbonite
D) titanium carbide
E) titanium (II) carbonate

23) How many neutrons are present in Ne–22 (^{22}Ne)? 23) _____

A) 10
B) 12
C) 22
D) 32
E) none of the above

24) What is the systematic name for P_2O_5? 24) _____

A) diphosphorus dioxide B) diphosphorus oxide
C) phosphorus pentaoxide D) diphosphorus pentaoxide

25) Determine the name for $CoCl_2 \cdot 6H_2O$. Remember that Co forms several ions. 25) _____

A) cobalt (II) chloride hexahydrate
B) cobalt chloride hydrate
C) cobalt (II) chloride heptahydrate
D) cobalt (I) chloride heptahydrate
E) cobalt (I) chloride

26) Which element has the following ground-state electron configuration? 26) _____

$[Kr]5s^2 4d^{10} 5p^2$

A) Ge B) Pb C) Sn D) Te E) Sb

27) Which of the following electron transitions would be expected to emit any light in the Bohr model of the atom? 27) _____

A) $n = 3$ to $n = 1$ B) $n = 5$ to $n = 7$ C) $n = 1$ to $n = 4$ D) $n = 2$ to $n = 3$

28) How many liters are in 333 mL? 28) _____

A) 0.333 L
B) 3.33 L
C) 3.33×10^5 L
D) 33.3 L
E) none of the above

29) How many orbitals can have the 4*p* description in a given atom? 29) _____

A) 1 B) 2 C) 3 D) 4

30) What is the chemical formula for sulfurous acid? 30) _____

A) $H_2SO_3(aq)$ B) $H_2SO_4(aq)$ C) $HSO_3(aq)$ D) $HSO_4(aq)$

31) What is the density (g/mL) of an object that has a mass of 14.01 grams and, when placed into a graduated cylinder, causes the water level to rise from 25.2 mL to 33.6 mL? 31) _____

A) 0.60 g/mL
B) 1.7 g/mL
C) 1.8 g/mL
D) 2.4 g/mL
E) none of the above

32) An object weighing 1.840 kg has a volume of 0.0015 m^3. What is the density of the object in g/cm^3? 32) _____

A) 0.0028 g/cm^3
B) 1.2 g/cm^3
C) 0.82 g/cm^3
D) 0.0012 g/cm^3
E) none of the above

33) The correct number of significant figures in the number 4.0×10^{-2} is: 33) _____

A) 3
B) 1
C) 2
D) ambiguous.
E) none of the above

34) What is the chemical formula for the compound composed of sodium and carbonate ions? 34) _____

A) $Na_2(CO_3)_2$
B) Na_2CO_3
C) $NaCO_3$
D) $Na(CO_3)_2$
E) none of the above

35) Which one of the following species has the electron configuration of $1s^2 2s^2 2p^6$? 35) _____

1. Na^+
2. O^{2-}
3. F^-

A) 1 and 2 only
B) 1 and 3 only
C) 2 and 3 only
D) All of 1, 2, and 3
E) Neither 1, 2, or 3

Answer Key
Testname: PRACTICE EXAM 1 OF 5

1) B
2) D
3) A
4) B
5) A
6) B
7) C
8) E
9) B
10) C
11) B
12) B
13) A
14) C
15) D
16) A
17) C
18) C
19) D
20) A
21) D
22) E
23) B
24) D
25) A
26) C
27) A
28) A
29) C
30) A
31) B
32) B
33) C
34) B
35) D

Formulas

$d = m / V$

$K = °C + 273.15$

$°F = (9/5)(°C) + 32°$

$q = mc\Delta T$

$\Delta T = T_f - T_i$ or $\Delta T = T_2 - T_1$

Volume of a rectangular prism(bar), $V = l \cdot w \cdot h$

Volume of a cylinder, $V = \pi r^2 h$

Greek Prefixes

1-mono
2-di
3-tri
4-tetra
5-penta
6-hexa
7-hepta
8-octa
9-nona
10-deca

Conversions

1mol = 6.022×10^{23}
1 cm^3 = 1 mL (exactly)
1 m = 39.37 in
1 in = 2.54 cm (exactly)
1mi = 1.609 km
1 gal = 3.785 L
4 qt = 1 gal (exactly)
1 kg = 2.205 lb
1 lb = 453.6 g
1 cal = 4.184 J
1 metric ton = 1000 kg

Metric

pico = 10^{-12}
mega = 10^6
giga = 10^9

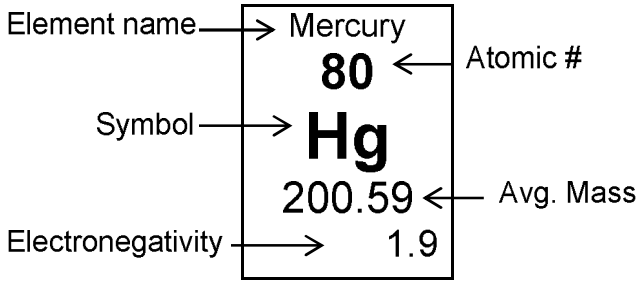
Densities

Water = 1.0 g/mL
Mercury = 13.5 g/mL

Specific Heat Capacities

Lead = 0.128 J/g·°C
Gold = 0.128 J/g·°C
Ethanol = 2.42 J/g·°C
Copper = 0.385 J/g·°C
Water = 4.18 J/g·°C

The Periodic Table of the Elements



1																	18
Hydrogen 1 H 1.008 2.1	2											13	14	15	16	17	Helium 2 He 4.003 ---
Lithium 3 Li 6.94 1.0	Beryllium 4 Be 9.01 1.5											Boron 5 B 10.81 2.0	Carbon 6 C 12.011 2.5	Nitrogen 7 N 14.007 3.0	Oxygen 8 O 15.999 3.5	Fluorine 9 F 18.998 4.0	Neon 10 Ne 20.180 ---
Sodium 11 Na 22.99 0.9	Magnesium 12 Mg 24.31 1.2	3	4	5	6	7	8	9	10	11	12	Aluminum 13 Al 26.98 1.5	Silicon 14 Si 28.09 1.8	Phosphorus 15 P 30.97 2.1	Sulfur 16 S 32.07 2.5	Chlorine 17 Cl 35.45 3.0	Argon 18 Ar 39.95 ---
Potassium 19 K 39.10 0.8	Calcium 20 Ca 40.08 1.0	Scandium 21 Sc 44.96 1.3	Titanium 22 Ti 47.88 1.5	Vanadium 23 V 50.94 1.6	Chromium 24 Cr 52.00 1.6	Manganese 25 Mn 54.94 1.5	Iron 26 Fe 55.85 1.8	Cobalt 27 Co 58.93 1.8	Nickel 28 Ni 58.69 1.8	Copper 29 Cu 63.55 1.9	Zinc 30 Zn 65.39 1.6	Gallium 31 Ga 69.72 1.6	Germanium 32 Ge 72.61 1.8	Arsenic 33 As 74.92 2.0	Selenium 34 Se 78.97 2.4	Bromine 35 Br 79.90 2.8	Krypton 36 Kr 83.80 3.0
Rubidium 37 Rb 85.47 0.8	Strontium 38 Sr 87.62 1.0	Yttrium 39 Y 88.91 1.2	Zirconium 40 Zr 91.22 1.4	Niobium 41 Nb 92.91 1.6	Molybdenum 42 Mo 95.94 1.8	Technetium 43 Tc (98) 1.9	Ruthenium 44 Ru 101.07 2.2	Rhodium 45 Rh 102.91 2.2	Palladium 46 Pd 106.42 2.2	Silver 47 Ag 107.87 1.9	Cadmium 48 Cd 112.41 1.7	Indium 49 In 114.82 1.7	Tin 50 Sn 118.71 1.8	Antimony 51 Sb 121.76 1.9	Tellurium 52 Te 127.60 2.1	Iodine 53 I 126.90 2.5	Xenon 54 Xe 131.29 2.6
Cesium 55 Cs 132.91 0.7	Barium 56 Ba 137.33 0.9	Lanthanum 57 La 138.91 1.1 *	Hafnium 72 Hf 178.49 1.3	Tantalum 73 Ta 180.95 1.5	Tungsten 74 W 183.84 1.7	Rhenium 75 Re 186.21 1.9	Osmium 76 Os 190.23 2.2	Iridium 77 Ir 192.22 2.2	Platinum 78 Pt 195.08 2.2	Gold 79 Au 196.97 2.4	Mercury 80 Hg 200.59 1.9	Thallium 81 Tl 204.38 1.8	Lead 82 Pb 207.20 1.8	Bismuth 83 Bi 208.98 1.9	Polonium 84 Po (209) 2.0	Astatine 85 At (210) 2.2	Radon 86 Rn (222) 2.4
Francium 87 Fr (223) 0.7	Radium 88 Ra (226) 0.9	Actinium 89 Ac (227) 1.1 **	Rutherfordium 104 Rf (267) ---	Dubnium 105 Db (268) ---	Seaborgium 106 Sg (271) ---	Bohrium 107 Bh (272) ---	Hassium 108 Hs (270) ---	Meitnerium 109 Mt (276) ---	Darmstadtium 110 Ds (281) ---	Roentgenium 111 Rg (280) ---	Copernicium 112 Cn (285) ---	Ununtrium 113 Uut (284) ---	Flerovium 114 Fl (289) ---	Ununpentium 115 Uup (288) ---	Livermorium 116 Lv (293) ---	Ununseptium 117 Uus (294) ---	Ununoctium 118 Uuo (294) ---

*lanthanides	Cerium 58 Ce 140.12 1.1	Praseodymium 59 Pr 140.91 1.1	Neodymium 60 Nd 144.24 1.1	Promethium 61 Pm (145) 1.1	Samarium 62 Sm 150.36 1.2	Europium 63 Eu 151.97 1.1	Gadolinium 64 Gd 157.25 1.2	Terbium 65 Tb 158.93 1.1	Dysprosium 66 Dy 162.50 1.2	Holmium 67 Ho 164.93 1.2	Erbium 68 Er 167.26 1.2	Thulium 69 Tm 168.93 1.3	Ytterbium 70 Yb 173.04 1.1	Lutetium 71 Lu 174.97 1.1
**actinides	Thorium 90 Th 232.04 1.3	Protactinium 91 Pa 231.04 1.5	Uranium 92 U 238.03 1.4	Neptunium 93 Np (237) 1.4	Plutonium 94 Pu (244) 1.3	Americium 95 Am (243) 1.3	Curium 96 Cm (247) 1.3	Berkelium 97 Bk (247) 1.3	Californium 98 Cf (251) 1.3	Einsteinium 99 Es (252) 1.3	Fermium 100 Fm (257) 1.3	Mendelevium 101 Md (259) 1.3	Nobelium 102 No (258) 1.3	Lawrencium 103 Lr (262) ---