CHE 128
Autumn 2011

Specific Objectives – Exam 1

A periodic table will be provided

Be able to:

Be able to write the decimal representation of a number in scientific notation
Identify the estimated digit in a number
Determine the correct number of significant figures in a number
Recall the rules for determining the number of significant figures in an addition/subtraction calculation
Recall the rules for determining the number of significant figures in mutiplication/division calculation
Determine the correct number of significant figures in a calculation
Convert units using multipliers (know the values of the prefix multipliers for milli-, kilo-, centi-)
Convert units using conversion factors
Recall the density of water (1 g/cm^3)
Recall that 1 mL = 1 cm^3
Calculate volume given the three spatial dimensions (length, width, height) of a substance
Calculate density of a substance based on its mass and volume
Compare densities to determine which substance will float on top or sink to the bottom
Convert units raised to a power
Identify an example of matter
Predict the shape, volume, and compressibility of a substance (solid, liquid, or gas)
Identify physical properties
Identify chemical properties
Use the law of conservation of mass to predict the mass of a product of a reaction
Convert units of energy (*J*, Calorie) – conversion factor will be given
Identify an exothermic reaction (heat is released/lost)
Identify an endothermic reaction (heat is absorbed/added)
Identify an element
Recall the boiling point of water
Convert units of temperature (˚C, ˚F, K)
Calculate the specific heat capacity of a substance – equation will be given
Compare specific heat capacities of substances to predict their relative change to heat
Predict the nature of electrical charge
Identify the names of elements based on their symbols
Identify alkali metals
Identify alkaline earth metals
Identify halogens
Identify noble gases
Identify transition metals

Identify metals
Identify nonmetals
Identify metalloids
Identify a cation (positively-charged, formed from lose of electrons)
Identify an anion (negatively-charged, formed from gain of electrons)
Identify isotopes (how they are similar and how they are different)
Determine the number of protons in an atom
Determine the number of electrons in an atom
Determine the number of neutrons in an atom
Predict the relative natural abundance of isotopes based on atomic mass
Calculate the atomic mass of an element based on the masses and abundances of isotopes