**Handy Dandy Midterm Review List**

| Measurement  Metric System  Celcius  Liter  Gram  Joule  Atmosphere  Metric Prefix  Scientific notation  Significant digits & rules  (+/-) & (x/**÷**) | **Matter**  Matter  Scientific method  Quantitative observation  Qualitative observation  Interpretation  (hypothesis)  Solid/liquid/gas  Definite/indefinite volume  Definite/indefinite shape  Intermolecular forces  Physical change  Chemical change  Law of Conservation of  Matter(mass)  Density  Mass  Volume  Heterogeneous mixture  Homogeneous mixture  Pure substance  Atom  Element  Compound  Molecule  Diatomic molecule  Triatomic molecule  Filtration (filter)  Distillation  Crystallization | **Energy**  Energy  Chemical energy  Mechanical energy  Electrical energy  Law of Conservation of  Energy  Heat energy  Temperature  Kinetic energy  Potential energy  Exothermic  Endothermic  Phase change diagram  Heat of fusion  Heat of vaporization  Melting  Freezing/crystallization  Boiling/vaporization  Condensation  Sublimation  Absolute zero  Freezing/melting point  of water?  Boiling point of water?  Specific heat capacity  of water  List the 3 heat formulas  & state how you know  when to use each |
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| **Gases/Liquids/Solids**  Gas pressure (how is it  made & what are the  units)  Atmospheric pressure  Avogadro’s hypothesis  Combined gas law  Kinetic Molecular Theory  Ideal vs Real gas  Vapor pressure  Boiling point  Normal boiling point  Standard pressure  (sea level)  Table H  Crystalline solid  Glass | | **Atomic Structure**  John Dalton’s Cannonball  model  JJ Thompson’s Pudding  model  Ernest Rutherford’s  Nuclear model  Gold Foil Experiment  Niels Bohr’s Planetary  model  Principal Energy Level  (shell)  Modern Model  “Wave-Mechanical”  (electron cloud)  Energy Shell  Atomic mass unit  Subatomic particles  (mass & charge of each)  Electron Configuration  Atomic #  Nuclear charge  Nucleons  Atomic charge  Mass #  Atomic Mass  Isotope  Ion  Valence electron  Lewis electron dot  diagram  Isoelectronic  “Noble Gas” electron  configuration  Ground state  Excited state  Bright-line spectrum  (spectral lines)  Continuous visible spectrum  Flame test  Spectroscope | | **Nuclear Chemistry**  Radioactive decay  Belt of Stability Graph  Radiation  Alpha particle  Beta particle  Gamma ray  Positron  Neutron  Proton  \*\*for above particles  know mass, charge,  ionizing & penetrating  power\*\*  Ionizing power  Penetrating power  Transmutation  (natural decay)  Artificial Transmutation  Conservation of Mass &  Charge  Alpha decay  Beta decay  Nuclear Fission  Nuclear Fusion  Half-life  Radioisotope  Medical tracers  Radioactive Carbon  dating | |
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|  | **Chemical Formulas & Equation**  Ionic compound  Molecular compound  IUPAC  Stock system  Prefix  Polyatomic ion  Reactants  Products  Coefficient  Subscript  Synthesis  Decomposition  Single replacement  Double replacement  Combustion | | **Periodic Table**  Dmitri Mendeleev  Henry Mosely  Modern Periodic Law  Chemical symbol  Oxidation state (ionic charge)  Periods  Groups (families)  Properties of:  Metals  Nonmetals  Metalloids (staircase)  Transition elements  Allotropes  Periodic Trends & why:  Atomic radius  Ionization energy  Electronegativity  Ions formed from:  Metals  Nonmetals  Element characteristics for:  Hydrogen  Alkali metals  Alkaline earth metals  Transition metals  Halogens  Noble gases  Metallic & Nonmetallic character | |