**Handy Dandy Midterm Review List**

| MeasurementMetric SystemCelciusLiterGramJouleAtmosphereMetric PrefixScientific notationSignificant digits & rules(+/-) & (x/**÷**) | **Matter**MatterScientific methodQuantitative observationQualitative observationInterpretation  (hypothesis)Solid/liquid/gasDefinite/indefinite volumeDefinite/indefinite shapeIntermolecular forcesPhysical changeChemical changeLaw of Conservation of Matter(mass)DensityMass VolumeHeterogeneous mixtureHomogeneous mixturePure substanceAtomElementCompoundMoleculeDiatomic moleculeTriatomic moleculeFiltration (filter)DistillationCrystallization | **Energy**EnergyChemical energyMechanical energyElectrical energyLaw of Conservation of  EnergyHeat energyTemperatureKinetic energyPotential energyExothermicEndothermicPhase change diagramHeat of fusionHeat of vaporizationMeltingFreezing/crystallizationBoiling/vaporizationCondensationSublimationAbsolute zeroFreezing/melting point of water?Boiling point of water?Specific heat capacity  of waterList 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 pressureAvogadro’s hypothesisCombined gas lawKinetic Molecular TheoryIdeal vs Real gasVapor pressureBoiling pointNormal boiling pointStandard pressure  (sea level)Table HCrystalline solidGlass | **Atomic Structure**John Dalton’s Cannonball modelJJ Thompson’s Pudding modelErnest Rutherford’s  Nuclear modelGold Foil ExperimentNiels Bohr’s Planetary modelPrincipal Energy Level (shell)Modern Model “Wave-Mechanical” (electron cloud)Energy ShellAtomic mass unitSubatomic particles  (mass & charge of each)Electron ConfigurationAtomic #Nuclear chargeNucleonsAtomic chargeMass #Atomic MassIsotopeIonValence electronLewis electron dot  diagramIsoelectronic“Noble Gas” electron configurationGround stateExcited stateBright-line spectrum (spectral lines)Continuous visible spectrumFlame testSpectroscope | **Nuclear Chemistry**Radioactive decayBelt of Stability GraphRadiationAlpha particleBeta particleGamma rayPositronNeutronProton\*\*for above particles know mass, charge, ionizing & penetrating power\*\*Ionizing powerPenetrating powerTransmutation (natural decay)Artificial TransmutationConservation of Mass &  ChargeAlpha decayBeta decayNuclear FissionNuclear FusionHalf-lifeRadioisotopeMedical tracersRadioactive Carbon  dating |
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|  | **Chemical Formulas & Equation**Ionic compoundMolecular compoundIUPACStock systemPrefixPolyatomic ionReactantsProductsCoefficientSubscriptSynthesisDecompositionSingle replacementDouble replacementCombustion | **Periodic Table**Dmitri MendeleevHenry MoselyModern Periodic LawChemical symbolOxidation state (ionic charge)PeriodsGroups (families)Properties of: Metals Nonmetals Metalloids (staircase) Transition elementsAllotropesPeriodic Trends & why: Atomic radius Ionization energy ElectronegativityIons formed from: Metals NonmetalsElement characteristics for: Hydrogen Alkali metals Alkaline earth metals Transition metals Halogens Noble gasesMetallic & Nonmetallic character |