

WRITING ACADEMIC TOURNAMENT QUESTIONS

CHEMISTRY

SUGGESTED TOPICS	5-PT	10-PT	15-PT	TEAM	Notes
<b>Lab Techniques</b>					
apparatus					
procedures					
equipment					
colors					
<b>Thermochemistry</b>					
Hess's Law					
Gibbs-Helmholtz					
H, G, S/calorimetry					
<b>Acids/Bases/Salts</b>					
nomenclature, polyatomic ions					
anhydrides, oxide					
reactions, theories					
chemical quantities					
units, conversions, density					
%composition, % amu					
empirical/molecular formula					
buffers, pH, indicators					
%K, titrations, solubility prod.					
<b>Kinetics</b>					
determining rate laws					
calculation for order of reaction					
graphic data					
factors affecting					
<b>Reaction types</b>					
ID types of reactions, industry					
predicting products					
redox					
<b>Stoichiometry</b>					
balanced equations					
balanced redox equations					
general					
in acid, in base					
mass-volume					
volume-volume					
Gas laws, STP, K.E.					
Boyle, Charles					
Dalton, Graham					
combined					
Ideal, Real					
Limiting reagent					
excess reactant					
% yield					
Half-life calculations					

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<b>History</b>					
people					
famous experiments/claims					
early events					
<b>Nuclear</b>					
<b>Periodic Properties/</b>					
Molecular geometry					
Periodic trends, oxidation #					
atomic radius/diameter					
reactivity, metals, nonmetals					
electronegativity					
ionization energy					
electron affinity					
Ionic vs. atomic radius					
Properties--solids, liquids, gases					
crystals/lattice structures					
Atomic structure					
Electron configuration					
Quantum mechanics					
Light					
Bonding					
covalent, ionic, metallic					
co-ordinate covalent					
Intermolecular forces					
Molecular geometry					
shapes					
angles					
hybridization					
<b>Solutions</b>					
definition of solute, solvent					
polar/nonpolar					
electrolytes/nonelectrolytes					
properties, colloids, emulsion					
<b>dilut, %conc, molarity, molality, normality</b>					
coligative properties					
fp. bp, osmotic pressure					
<b>Equilibrium</b>					
acid-base					
gases					
phase diagrams					
Le Chatelier's principle					

