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| Problem | Resources | Answer | Rubric |
| 1.66 | Text P.15Class website ppt slide1 | 5.50⁰ | **5pts total**4pts – equation/method for temp. conversion1pt – answer |
| 1.67 | Text P.17Class website ppt slide2 |  -----C6H6(l)https://d30y9cdsu7xlg0.cloudfront.net/png/7669-200.png ----H2O(l) ----Hg(l) | **2pts total**1.5pt – ½ pt each correct alignment of density values½ pt complete sketch |
| 1.72 | Class website ppt slide3 | 244 g H2SO4 | **5pts total**4pts – calculation method1pt – answer |
| 1.75 | Class website ppt slide4 | 0.018 mm | **6pts total**5pts - calculation method1pt - answer |
| 2.87 a & b | Text P.45Class website ppt slide5 | a) As, p=33, n=41b) I, p=53, n=74 | **3pts total**½ pt - each correct element½ pt - each correct p ½ pt – each correct n |
| 2.90 | Text P.47Class website ppt slide6 | 207 amu | **3pts total**2 pts – calculation method1 pt - answer |
| 2.98 | Text P.54-67Class website ppt slide7  | a) Nickel (II) Oxide, Ni2+b) Manganese (IV) Oxide, Mn4+c) Chromium (III) Oxide, Cr3+d) Molybdenum (VI) Oxide, Mo6+ | **4pts total** – ½ pt each correct name – ½ pt correct charge |
| 2.102 | Text P.54-67Class website ppt slide7 | a) Sodium Chlorideb) Sodium Hydrogen Carbonatec) Sodium Hypochlorited) Sodium Hydroxidee) Ammonium Carbonatef) Calcium Sulfate | **3 pts total**– ½ pt each correct name |
| 2.104 | Text P.54-67Class website ppt slide7 | a) CaS, Ca(HS)2b) HBr, HBrOc) AlN, Al(NO2)3d) FeO, Fe2O3e) NH3, NH4+f) K2SO3, KHSO3g) Hg2Cl2, HgClh) HClO3, HClO4 | **8pts total**– ½ pt each correct formula |
| 2.105 a & b | Text P.54-67Class website ppt slide8 | a) Image result for cyclohexaneb) Image result for hexaneStraight chain allows 3 H’s on each end of chain. | **3pts total**– 1pt cyclic structure – 1pt straight chain –1pt explanation |
| 3.82 | Text P.88Class website ppt slide9 | NH3  > (NH2)2CO > NH4NO3 > (NH4)2SO4 | **5pts total**– 1pt each correct % composition calculation method & answer– 1pt correct order |
| 3.87 a | Text P.95-97Class website ppt  slide10 | a) C10H18O | **5pts total** –4pts correct calculation method–1pt correct empirical formula |
| 3.99 a, b,& c--only C2H2 | Text P.102-105Class website ppt  slide11 | a) 2C2H2 + 5O2 🡪 4CO2 + 2H2Ob) LR = O2c) C2H2 remaining = 6.7g   | **7pts total**–1pt correctly balanced equation–3pts calculation method(s) correctly determines LR–3pts calculation method(s) correctly determines C2H2 remaining |
| 4.92 | Text P.124-128Text P.125 Solubility RulesClass website ppt Slide12 | Q1 – precipitate is CdS(s)Q2 – Na+(aq) & NO3- (aq) remain in soln.Q3 – net ionic eq. Cd2+(aq) + S2-(aq) 🡪 CdS(s) | **7pts total**-1pt correct balanced eq. w/ correct physical states–½ pt each correct ion remaining in solution–3.5pt correct complete ionic equation–1.5pt correct net ionic equation |
| 5.98 a | Text P.182-184Class website ppt Slide13 | a) 3.27x103 J | **3pts total**–1.5pts correct calculation method–1pt answer- ½ pt correct sig figs |
| 6.15 a,b,c | Text P.212-215Text P.213 EMS DiagramClass website ppt Slide14 | a)  =3.0x1013 s-1b)  = 5.5x10-7 m or 550 nmc) part a – outside of visible range part b – w/in visible range | **5pts total**a) – 1pt correct calculation method, 1pt answerb) – 1pt correct calculation method, 1pt answerc) – ½ pt each, correctly assess whether w/in visible light range |
| 6.73 a, b, c | Text 234-243Class website ppt Slide15 | a) 2p6 is missing from configurationb) 2s22p3 is already included in [Ne]c) 3p64s2 is missing from configuration | **3pts total**–1pt each correction |
| 7.45 a,b,c,d,e | Text P.264-270Text P.268 IE Diagram Class website ppt S16  | a) Ar c) Co e) Teb) Be d) S  | **2.5pts total**– ½ pt each |
| 7.48 a , b | Text P.269Class website ppt S17 | a) 1s2 2s2 2p6 3s2 3p6 4s2 3d1= Cr3+ No, [Ar] 4s2 3d1b) 1s2 2s2 2p6 = N3- Yes, [Ne] | **3pts total**– 1 pt each correct configuration– ½ pt yes/no ion configuration matches noble gas configuration |
| 8.88 a | Text P.316Class website ppt S18 | FC = 1 | **3.5pts total** –1.5pts correct Lewis structure –2pts correct formal charge calculation |
| 9.79 b , c | Text P.362Class website ppt S19 | b) 2 , 2 c) 3 , 1  | **4pts total**– 1pt each correct Lewis structure– ½ pt each correct , ½ pt each correct  |
| 10.91 | Text P.426 Gas LawsClass website ppt S20 | 3.3 mm3 | **4pts total**– 1pt correct gas law–2pts correct calculation method– 1pt answer |
| 10.93 | Text P.426 Gas LawsClass website ppt S20 | 5.7x10-4 atm | **4pts total**– 1 pt correct gas law– 2pt correct calculation method– 1 pt answer |
| 11.56 a | Text P.456-458Class website ppt S21 |  50.0 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - L G  S 1.0 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - 0.0 - -230 -180 -130 -80 | **3pts total**– 1pt graph correctly proportioned– ½ pt each Triple Point, Critical Point, MP, FP |
| 13.24 a | Text P.541 diagramClass website ppt S22 | a) 25 g | **3pts total**– 2pts correct calculation method- 1pt answer |
| 13.89 a | Text P.144, 543Class website ppt S23 | 1.25x10-4 mol/L | **3pts total**–2pts calculation method– 1pt answer |
| 13.69 a | Text P.549-551 Class website ppt S24  | a) FP = -115.2⁰C BP= 78.8⁰C | **4pts total**– 1pt each correct ∆Tf & ∆TB calc– 1pt each correct FP calc & BP calc |
| 14.7  | Text P.594Class website ppt S25 | 1- Reactant2- Activation Energy (Ea)3- Total Energy of Reaction (∆E or ∆H)4- Product  | **2pts total**– ½ pt each component identified |
| 15.14 a, b | Text P.630-632Class website ppt S26 | a) K = [O2]3/[O3]2 , homogeneousb) K = 1/[Cl2]2, heterogeneous | **3pts total**– 1 pt each correct expression– ½ pt each identify homo/hetero |
| 16.391st row only …do not complete entire chart | Text P.708 equationsClass website ppt S27 | 1st row: H+ = 7.5x10-3 M OH- = 1.3x10-12 M pH = 2.12 pOH = 11.88 acidic | **7pts total**–2pts each calculation method for OH-, pH, pOH–1pt acidic/basic |
| 17.6  | Text P.731,733,734, 736, 737Class website ppt S28 | a) iib) iiic) id) iv | **2pts total**– ½ pt each |