

Exam 3 Review Supplement
Palmer Graves, Instructor

MULTIPLE CHOICE

1. Given the following table of K_{sp} values, determine which compound listed has the smallest solubility.

compound	K_{sp}
$CdCO_3$	5.2×10^{-12}
$Cd(OH)_2$	2.5×10^{-14}
AgI	8.3×10^{-17}
$Fe(OH)_3$	4×10^{-38}
$ZnCO_3$	1.4×10^{-11}

- a) $ZnCO_3$
b) $Cd(OH)_2$
c) $CdCO_3$
d) AgI
e) $Fe(OH)_3$
2. Calculate the concentration (in M) of iodide ions in a saturated solution of lead(II) iodide ($K_{sp} = 1.39 \times 10^{-8}$).
- a) 4.21×10^{-4}
b) 3.05×10^{-3}
c) 1.52×10^{-3}
d) 3.48×10^{-3}
e) 1.39×10^{-8}
3. The solubility of $AuCl_3$ (as Au^{3+} and Cl^-) in water at 298 K is 3.3×10^{-7} M. K_{sp} for $AuCl_3$ is _____.
- a) 1.2×10^{-26}
b) 3.2×10^{-25}
c) 3.3×10^{-13}
d) 3.3×10^{-27}
e) 1.3×10^{-6}
4. The solubility of $Mn(OH)_2$ is 2.2×10^{-5} mol/L. What is the K_{sp} of $Mn(OH)_2$?
- a) 1.1×10^{-14}
b) 4.3×10^{-14}
c) 2.1×10^{-14}
d) 4.8×10^{-10}
e) 2.2×10^{-5}
5. What is the solubility (in M) of $PbCl_2$ in a 0.15 M solution of HCl? (K_{sp} $PbCl_2 = 1.6 \times 10^{-5}$)
- a) 2.0×10^{-3}
b) 1.1×10^{-4}
c) 1.8×10^{-4}
d) 7.1×10^{-4}
e) 1.6×10^{-5}

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1. e

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2. b

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3. b

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4. b

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5. d

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