

Chemistry IH/I Final Exam Review – Mrs. Bauck
Optional 40-point assignment and help card due _____

The exam will consist of two parts. The district EOC has 54 multiple choice questions (50% of total score), and Bauck’s exam has 71 (for honors) or 56 (for regular) multiple choice questions (50% of total score). This review will help you with both portions.

The final exam total score is weighted 25% of the overall semester grade. Study for it. Reread the book and notes, redo practice problems, watch tutorial videos—whatever helps you, do it.

District EOC study guide:

<http://www.kwanga.net/chemnotes/DISTRICT%20CHEM%20EOC%20BLUEPRINT.pdf>

Bauck’s information about district EOC: <http://kwanga.net/chemnotes/EOC%20info.pdf>

This exam review was written directly from Bauck’s exam. The exam review will count as a 40/40 optional assignment grade if it is completed correctly and shown to the teacher on or before the due date.

“Help card” for Bauck’s exam (NOT allowed on the EOC portion): You may use ONE 3” x 5” or 4” x 6” index card with information written or typed on both sides. The actual card must be submitted for approval the day the exam review is due. It will be checked for size and content. No electronic copies of cards will be accepted. No sharing of cards during the exam is permitted. You may write any information you want on the card EXCEPT THE POLYATOMIC IONS AND SIX COMMON ACIDS. You will have a laminated periodic table, but I will not furnish any equations or constants for you, so doing a help card is important. NO LATE HELP CARDS WILL BE ACCEPTED.

You will need #2 pencils and erasers, a calculator, as well as something to do if you finish early. No electronic devices are allowed as long as exams are being taken in the room.

TOPICS ON BAUCK’S PART OF THE EXAM:

Ch. 9: The Mole	10 questions
Ch. 10: Stoichiometry	10 questions
Ch. 11: States of Matter	5 questions
Ch. 12: Gases	10 questions
Ch. 13: Mixtures and Solutions	6 questions
Ch. 17: Acids & Bases	6 questions
Ch. 17: Neutralization	9 questions
Chem IH only: Ch. 14: Energy and Chemical Change	15 questions

TOTAL: 71 questions for Chem IH

TOTAL: 56 questions for Chem I

Suggestions for the help card: (you may cut this section out and glue to a card)
more on next page for honors chem...

STANDARD TEMPERATURE: 0° C or 273.15 K

STANDARD PRESSURE: 1 atm, 760 mm Hg, 760 torr , 101.3 kPa, 14.7 psi (italics are exact)

K = °C + 273.15

% yield = (ACTUAL / THEORETICAL) x 100

P_{TOTAL} = P₁ + P₂ + P₃...

R = 0.08206 L atm/mol K

M = mol / L

PV = nRT

$$\frac{P_1V_1}{T_1} = \frac{P_2V_2}{T_2}$$

pH + pOH = 14.00

ADDITIONAL INFO. FOR HONORS HELP CARD ONLY:

$q = m c \Delta T$	$+\Delta S = \text{increased entropy (favorable)}$
$\Delta G = \Delta H - T\Delta S$	$-\Delta S = \text{decreased entropy (unfavorable)}$
$-\Delta H = \text{exothermic (favorable)}$	$-\Delta G = \text{spontaneous (favorable)}$
$+\Delta H = \text{endothermic (unfavorable)}$	$+\Delta G = \text{nonspontaneous (unfavorable)}$

CHAPTER 9: MOLES

- | | | |
|--|---------------------------|------------------------|
| 1. amu, GFM, GMM | a. $g \rightarrow mol$ | $mol \rightarrow g$ |
| 2. density | b. $mol \rightarrow r.p.$ | $r.p. \rightarrow mol$ |
| 3. molar mass | c. $g \rightarrow r.p.$ | $r.p. \rightarrow g$ |
| 4. molar volume of a gas | d. $mol \rightarrow L$ | $L \rightarrow mol$ |
| 5. STP | e. empirical formula | |
| 6. types of representative particles (4) | f. molecular formula | |
| 7. MATH PROBLEMS (non-stoich) | g. percent composition | |
- Give examples:

CHAPTER 10: STOICHIOMETRY

- | | | |
|--------------------------------------|-----------------------------|--------------------------|
| 8. Interpreting equations - describe | b. $g A \rightarrow r.p. B$ | $r.p. A \rightarrow g B$ |
| 9. Mole ratios | c. $g A \rightarrow g B$ | |
| 10. MATH PROBLEMS | d. $L A \rightarrow L B$ | |
- Give examples:
- | | | |
|------------------------------|--------------------------|-----------------------|
| a. $mol A \rightarrow mol B$ | e. $g A \rightarrow L B$ | $L A \rightarrow g B$ |
| | f. Percent yield | |

CHAPTER 11: STATES OF MATTER

- | | | |
|-------------------|-----------------------------|--------------------------|
| 11. absolute zero | 18. Kinetic Theory of Gases | 25. solid |
| 12. amorphous | 19. liquid | 26. sublimation |
| 13. atm | 20. gas | 27. supercooled liquid |
| 14. barometers | 21. kelvin | 28. MATH PROBLEMS |
| 15. crystals | 22. phase changes | Give examples: |
| 16. condensation | 23. plasma | a. pressure conversion |
| 17. equilibrium | 24. pressure | b. temp. conversion |

CHAPTER 12: GASES

- | | | |
|--------------------------------------|--------------------------|---------------------------|
| 29. Define: α , P, V, T, n, R | 35. volume | d. Combined |
| 30. absolute scale | 36. MATH PROBLEMS | e. Ideal |
| 31. ideal gas | Give examples: | f. Partial pressure |
| 32. pressure | a. Charles | g. $Mol \rightarrow g$ |
| 33. real gas | b. Boyle | h. $Mol \rightarrow r.p.$ |
| 34. temperature | c. Gay-Lussac | i. $g \rightarrow L$ |

CHAPTER 13: MIXTURES and SOLUTIONS

- | | |
|----------------------------------|---------------------------|
| 37. colloid/colloidal suspension | 40. electrolytes |
| 38. concentrated | 41. hydration |
| 39. dilute | 42. "Like Dissolves Like" |

43. **MATH PROBLEMS**

Give examples:

- a. **molarity (solve for M)**
- b. **molarity (solve for moles)**
- c. **molarity (solve for grams)**

44. molality

45. saturated

46. solute

47. solution

48. solvent

49. supersaturated

50. suspension

51. unsaturated

CHAPTER 17: ACIDS and BASES

52. examples of common acids

53. examples of common bases

54. hydronium ion

55. neutral pH

56. pH

57. pH range of acids

58. pH range of bases

59. **MATH PROBLEMS**

Give examples:

pH, pOH, [H⁺], [OH⁻]

CHAPTER 17: NEUTRALIZATION

60. balancing neutralization equations

Give examples:

- a. balance
- b. predict products and balance
- c. write entire equation and balance

61. double displacement rxns.

62. identify a salt by its formula

63. net ionic equation for neutralization rxns.

CHAPTER 14:

64. calorimeter

65. endothermic vs. exothermic

66. energy

67. enthalpy (H)

68. entropy (S)

69. Gibbs' Free Energy

70. heat (q)

71. Second Law of Thermo.

72. specific heat

73. spontaneity

74. types of energy

75. **MATH PROBLEMS**

Give examples:

- a. **specific heat, short**
- b. **specific heat, long**
- c. **Gibb's Free Energy**
- d. **thermochemical eq. prob.**
- e. **heat and changes of state**
- f. **Hess' Law**