

1. Nomenclature (14 points): Name or give the formula for the following compounds:

NaF	<u>Sodium Fluoride</u>	barium iodide	<u>BaI₂</u>
CO	<u>Carbon Monoxide</u>	zinc nitrate	<u>Zn(NO₃)₂</u>
K ₂ S	<u>Potassium Sulfide</u>	copper (II) sulfate	<u>CuSO₄</u>
N ₂ O	<u>dinitrogen oxide</u>	nickel (II) carbonate	<u>NiCO₃</u>
(NH ₄) ₃ PO ₄	<u>Ammonium Phosphate</u>	sodium acetate	<u>NaC₂H₃O₂</u>
FeCl ₃	<u>Iron (III) Chloride</u>	cesium hydroxide	<u>CsOH</u>
H ₂ SO ₄ (aq)	<u>Sulfuric Acid</u>	carbon tetrahydride	<u>CH₄</u>

Answer the following questions:

1. (5 points) Complete the following calculation. Report your answer with the correct number of significant figures.
(6.02 + 5.119 + 0.04218) × (97.1 + 2.9005)

$$4sf \quad \underline{11.1812} \quad \times 100.0005$$

4sf

answer: 1118 (4sf)

2. (6 points) A patient weighs 220 lbs. A medication for this patient has a dosage of 3.5 mg per kg of body mass per day. What is the total daily dosage in grams of the medication based on this information?

$$220 \text{ lb} \times \frac{454 \text{ g}}{1 \text{ lb}} \times \frac{\text{kg}}{10^3 \text{ g}} \times \frac{3.5 \text{ mg of MED}}{\text{kg of body MASS}} \times \frac{1 \text{ g}}{10^3 \text{ mg}} =$$

answer: 0.35 g (2sf)

3. (5 points) A Student adds a piece of rock with a mass of 12.05g to a graduated cylinder filled to 13.5 mL. The final reading on the cylinder measures at 18.6 mL. What is the density of the rock in g/cm³?

$$d = \frac{12.05 \text{ g}}{(18.6 \text{ mL} - 13.5 \text{ mL}) \times \frac{1 \text{ cm}^3}{1 \text{ mL}}} =$$

(2sf)

answer: 2.5 g/cm³

4. (5 points) Determine the number of mm^2 in 0.52 ft^2 .

$$0.52 \text{ ft}^2 \times \left(\frac{12 \text{ in}}{1 \text{ ft}}\right)^2 \times \left(\frac{2.54 \text{ cm}}{1 \text{ in}}\right)^2 \times \left(\frac{10 \text{ mm}}{1 \text{ cm}}\right)^2 =$$

answer: $4.8 \times 10^4 \text{ mm}^2$

5. (7 points) Calculate the number of chlorine atoms in 24.1 g of iron (III) chloride. (162.20 g/mol)

$$24.1 \text{ g FeCl}_3 \times \frac{1 \text{ mol FeCl}_3}{162.20 \text{ g FeCl}_3} \times \frac{3 \text{ mol Cl}}{1 \text{ mol FeCl}_3} \times \frac{6.022 \times 10^{23} \text{ Cl}}{1 \text{ mol Cl}}$$

answer: $2.68 \times 10^{23} \text{ Cl-atoms}$

6. (8 points) What is the weight percentage of nitrogen in urea, $\text{CN}_2\text{H}_4\text{O}$? (60.06 g/mol)

1 mol of $\text{CN}_2\text{H}_4\text{O}$ contains 2 mol N \therefore 1 mol $\text{CN}_2\text{H}_4\text{O}$
 contains $2 \times 14.01 \text{ g}$
at N

$$\% \text{ N} = \frac{2 \times 14.01 \text{ g/mol}}{60.06 \text{ g/mol}} \times 100 =$$

answer: $46.66 \% \text{ N}$

PART 1

SUBJECTIVE SCORE INSTRUCTOR USE ONLY				
100	90	80	70	60
50	40	30	20	10
9	8	7	6	5
4	3	2	1	0

	(T)	(F)	KEY		
	%	2	3		
1	A	B	C	D	E
2	A	B	C	D	E
3	A	B	C	D	E
4	A	B	C	D	E
5	A	B	C	D	E
6	A	B	C	D	E
7	A	B	C	D	E
8	A	B	C	D	E
9	A	B	C	D	E
10	A	B	C	D	E
12	A	B	C	D	E
13	A	B	C	D	E
14	A	B	C	D	E
15	A	B	C	D	E
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44	A	B	C	D	E
45	A	B	C	D	E
46	A	B	C	D	E
47	A	B	C	D	E
48	A	B	C	D	E
49	A	B	C	D	E
50	A	B	C	D	E

IMPORTANT

TO USE SUBJECTIVE SCORE FEATURE:

- Mark total possible subjective points
- Only one mark per line on key
- 163 points maximum

EXAMPLE OF STUDENT SCORE:

100	90	80	70	60
50	40	30	20	10
9	8	7	6	5
4	3	2	1	0

USE NO. 2 PENCIL ONLY.

- MAKE DARK MARKS
- ERASE COMPLETELY TO CHANGE

EXAMPLE: A B C D E

SCANTRON®
FORM NO. 882-E

FOR USE ON TEST SCORING MACHINE ONLY

NAME	CHEM 6A Ex 1
SUBJECT	
DATE	FOJ
TEST NO.	Key
PERIOD	

TEST RECORD	
PART 1	
PART 2	
TOTAL	

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