

Review Packet Answer Key

Chemical Naming, Formulas, Equations, and Stoichiometry

(Topics 2 & 3 in your review book)

Equations & Stoichiometry Practice Questions

- | | |
|------|-------|
| 1. 4 | 8. 3 |
| 2. 4 | 9. 2 |
| 3. 4 | 10. 3 |
| 4. 2 | 11. 1 |
| 5. 2 | 12. 3 |
| 6. 2 | 13. 3 |
| 7. 2 | 14. 4 |

Formulas, Equations & Stoichiometry Review

- | | |
|------|-------|
| 1. 2 | 10. 1 |
| 2. 3 | 11. 4 |
| 3. 3 | 12. 3 |
| 4. 1 | 13. 2 |
| 5. 1 | 14. 4 |
| 6. 4 | 15. 2 |
| 7. 2 | 16. 4 |
| 8. 4 | 17. 3 |
| 9. 3 | 18. 2 |

19. Percent Error = $[(21.4-20.9)/20.9] \times 100\% = 2.4\%$

20. The empirical formula of C_8H_{18} is C_4H_9

21. Na: $23 \times 1 = \underline{23}$

C: $12 \times 1 = \underline{12}$

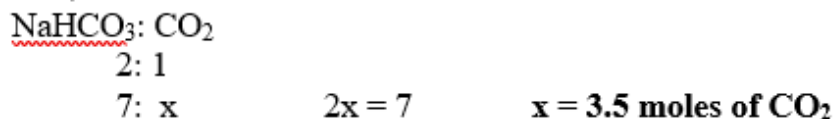
O: $16 \times 3 = \underline{48}$

106 grams/mole

$\%C = 12/\underline{106} \times 100\% = 11.3\%$

22. The reaction is **endothermic** because "heat" is written on the reactants side.

23. To do this question, use the mole ratio between the two substances:



24. $\mathbf{3 S + 2 KClO_3 \rightarrow 3 SO_2 + 2 KCl + \text{energy}}$

25. The reaction is a **synthesis** reaction.

26. Fe: $55.8 \times 2 = 111.6$

O: $16 \times 3 = 48.0$

159.6 grams/mole

27. The IUPAC (systematic) name for this compound is **Iron III oxide**. The roman numeral 3 is needed because Iron ions can be charged +2 or +3, and is chosen in this case because the formula includes iron with the +3 charge.

28. moles = $19 / 95 = \mathbf{0.20 \text{ moles}}$

29. The type of ORGANIC reaction is **substitution**.

30. One advantage of using ozone is that it is **safer to use**. Another is that it is more **environmentally friendly**.

31. **Three** significant figures are shown.

32. % water mass = $(0.76 \text{ g of water} / 2.13 \text{ g of hydrate}) \times 100\% = 35.7\%$

33. The crucible containing the sample must be heated until a constant mass is achieved in order to **insure that all the water has been driven out of the hydrate**