

Chemistry Placement Test - Sample Questions

The chemistry placement test is a 45 minute, multiple choice exam with 44 questions. The test is used to assess your present level of general and specific chemistry knowledge and your math skills. You should be given scratch paper (you cannot write on the exam itself) and the exam comes with the Periodic Chart of the Elements. During the examination, you may use a calculator. The sample questions below are intended as a guideline only.

Sample Questions:

1. Calculate the number of cubic meters of water in a fish tank holding 1.029 cubic yards of water.

Hint, 1 meter = 1.093 yards.

- a) 1.062 m³ b) 0.9414 m³ c) 1.125 m³ d) 0.7881 m³

2. The boiling point of acetone is 56.1°C. What is this temperature on the Fahrenheit scale?

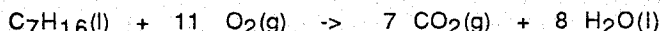
Hint, x°F = 9/5 y°C + 32

- a) 63.2 °F b) 149.2 °F c) 133.0 °F d) 48.9 °F

3. Looking at a Periodic table, determine the atomic number of Aluminum.

- a) 26.98 b) 13 c) 18 d) 39.95

For questions 4 - 6, consider the equation for burning heptane, C₇H₁₆:



4. What does (g) represent in this equation?

- a) grams b) free energy c) gaseous state d) giga

5. How many moles of CO₂ will be produced when 8.34 grams of heptane are burned?

- a) 7.00 mol b) 0.0834 mol c) 0.584 mol d) 1.71 mol

6. What volume (in ml) would 0.345 moles of gaseous CO₂ occupy at STP? Hint, STP is at 0°C and 760 Torr where 22.4 liters contain one mole.

- a) 129.4 ml b) 15.4 ml c) 22,400 ml d) 7,730 ml

7. Which of the following is a strong acid?

- a) NaCl b) NH₃ c) HNO₃ d) CaSO₄

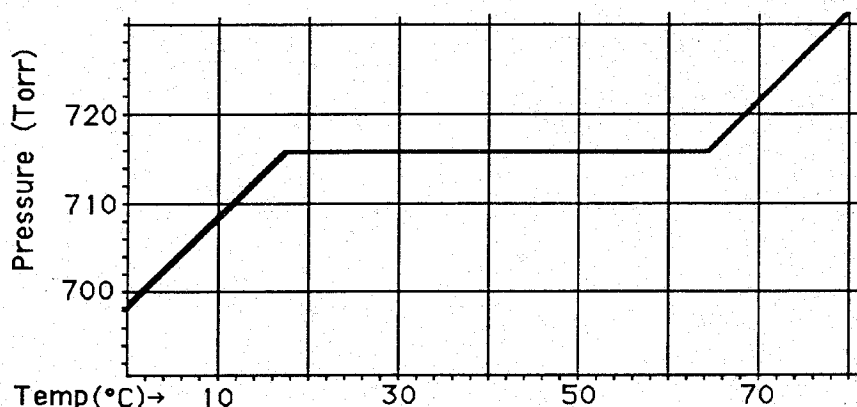
8. Which of the following represent the empirical formula?

- a) C₆H₁₂O₆ b) CH₂=C(OH)₂ c) CH₂O d) CH₃- $\underset{\text{H}}{\text{C}}$ =O

9. The formula for dinitrogen trioxide is

- a) N₂O₃ b) NO₃ c) N₂O d) NO

10. Using the graph below, determine the pressure (in torr) when the temperature is 70 °C.



- a) 698 torr b) 716 torr c) 721 torr d) 722 torr

Answers: 1. d 2. c 3. b 4. c 5. c 6. d 7. c 8. c 9. a 10. d