

General Chemistry Multiple Choice Questions Chapter 10

1 Which statement is not true?

- a A solute takes on the phase of the solvent
b A solute is in lesser quantity than a solvent
c A solute and solvent may be gases
d A polar solvent dissolves a nonpolar solute

	10.1
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2 In a solution of saltwater, what substance is the solvent?

- a Salt
b Water
c Neither
d Both

	10.1
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3 In a solution of saltwater, what substance is the solute?

- a Salt
b Water
c Neither
d Both

	10.1
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General Chemistry Multiple Choice Questions Chapter 10

1 The solubility of CO₂ (g) in water

a Increases with increasing temperature

c Increases with increasing pressure

b Increases with decreasing pressure

d Is not affected by temperature or pressure

	10.2
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2 Pressure has an appreciable effect on the solubility of _____ in liquids

a Liquids

c Solids and Liquids

b Solids

d Gases

	10.2
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3 Which of the following concentration units varies with temperature?

a Mass percent

c Molarity

e All of the above

b Mole fraction

d Molality

	10.2
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General Chemistry Multiple Choice Questions Chapter 10

1 The solubility of a particular salt in water is 9.8 g/mL at 25°C. If 10.3 g is completely dissolved in one milliliter of water, the solution is

- a Supersaturated
- b Saturated
- c Unsaturated
- d Dilute

	10.3
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2 A solution with a higher concentration than the solubility is

- a Unsaturated
- b Saturated
- c Not possible
- d Supersaturated

	10.3
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3 A solution with a concentration equal to the solubility is

- a Unsaturated
- b Saturated
- c Not possible
- d Supersaturated

	10.3
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General Chemistry Multiple Choice Questions Chapter 10

1 In which of the following is the solution concentration expressed in terms of molarity?

- a 10 g of solute / 1000 g of solution b 10 g of solute / 1000 mL of solution
c 10 mL of solute / 1 L of solution d 10 mol of solute / 1 L of solution
e 10 mol of solute / 1 kg of solution

	10.4
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2 What is the molarity of a solution that contains 4 moles of solute in 2 liters of solution?

- a 4 M b 8 M
c 5 M d 2 M

	10.4
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3 What is the molarity of a solution that contains 10 moles of solute in 1 liter of solution?

- a 1 M b 0.1 M
c 10 M d 100 M

	10.4
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General Chemistry Multiple Choice Questions Chapter 10

1 What is the molarity of a solution that contains 32.0 g of HCl in 2.50 L of solution?

- a 0.00351 M b 0.0128 M
c 0.351 M d 12.8 M

	10.5
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2 How many moles of H_2SO_4 are present in 250 mL of a 3.00 M H_2SO_4 solution?

- a 0.150 moles b 0.750 moles
c 1.50 moles d 7.50 moles

	10.5
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3 What is the molarity of a solution of 100.0 g of methanol, CH_3OH , in 250 mL of water?

- a 0.00400 M b 0.0125 M
c 8.91 M d 12.5 M

	10.5
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4 A 0.20 mol sample of MgCl_2 (s) and a 0.10 mol sample of KCl (s) are dissolved in water and diluted to 500 mL. What is the concentration of Cl^- in the solution?

- a 0.15 M b 0.30 M
c 0.50 M d 0.60 M
e 1.0 M

	10.5
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5 A student prepares a solution by dissolving 60.00 g of glucose ($M = 180.2$ g/mol) in enough distilled water to make a 250.0 mL of solution. The molarity of the solution should be reported as

- a 12.01 M b 12.0 M
c 1.332 M d 1.33 M
e 1.3 M

	10.5
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General Chemistry Multiple Choice Questions Chapter 10

1 For an experiment, a student needs 100.0 mL of 0.4220 M NaCl. If the student starts with NaCl (s) and distilled water, which of the following pieces of laboratory glassware should the student use to prepare the solution with the greatest accuracy?

- a 25 mL volumetric pipet
b 100 mL Erlenmeyer flask
c 100 mL graduated cylinder
d 100 mL volumetric flask
e 1 L beaker

	10.6
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2 If 50. mL of 1.0 M NaOH is diluted with distilled water to a volume of 2.0 L, the concentration of the resulting solution is

- a 0.025 M
b 0.050 M
c 0.10 M
d 0.50 M
e 1.0 M

	10.6
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3 How much of a 6.0 M HCl solution is needed to make 1.0 L of a 1.0 M HCl solution?

- a 150 mL
b 160 mL
c 170 mL
d 180 mL

	10.6
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4 What is the molarity of a NaNO₃ solution if 25.0 mL of a 0.200 M solution is diluted to 100.0 mL?

- a 0.0500 M
b 0.100 M
c 0.150 M
d 0.200 M

	10.6
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General Chemistry Multiple Choice Questions Chapter 10

1 What is the mole fraction of NaCl in a solution containing 20.2 g of NaCl and 55.0 g of water?

- a 0.898 b 0.102
c 0.152 d 0.268

	10.7
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2 What is the concentration in ppm of 3.56 g of NaCl in a solution with 500. mL of distilled water?

- a 7120 ppm b 712 ppm
c 71200 ppm d 71.2 ppm

	10.7
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3 What is the concentration in ppb of 0.0255 g of pollution in 1500. liters of lake water (D = 1024 kg/m³)

- a 17.00 ppb b 170.0 ppb
c 16.60 ppb d 166.0 ppb

	10.7
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General Chemistry Multiple Choice Questions Chapter 10

1 How many milliliters of 1.00 *M* NaNO₃ are required to *completely* neutralize 100.0 mL of 0.500 *M* H₃PO₄?

- a 50.0 mL
b 100.0 mL
c 150.0 mL
d 200.0 mL

	10.8
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2 25.00 mL of a 0.100 *M* aqueous solution of magnesium chloride is added to 25.00 mL of a 0.150 *M* aqueous solution of NaOH. A fine white solid substance is observed. How many moles of the white substance form?

- a 0.00188
b 0.00250
c 0.00375
d 0.00500

	10.8
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3 How many milliliters of 6.0 *M* HCl will react completely with 250. mL of 2.50 *M* NaOH?

- a 50. mL
b 100. mL
c 200. mL
d 300. mL

	10.8
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