Gases, Thermodynamics, and Equilibrium — Practice Test

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1 **A gas mixture has total pressure 400 kPa, and one gas has partial pressure 100 kPa. The partial pressure, in kilopascals, of the other gas is ____**

ANSWER _____

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2 **Hess law states that the total enthalpy change of a reaction is**

A. always zero

B. dependent on the path taken

C. changed by a catalyst

D. the sum of the enthalpy changes of its steps

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3 **Using c = 4.2 J per gram per degree Celsius, the heat, in joules, absorbed by 200 g of water warmed by 10 degrees Celsius is ____**

ANSWER _____

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4 **The equilibrium constant of a reaction changes when**

A temperature changes

B pressure changes only

C a catalyst is added

D concentration changes

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5 **A gas at 200 kPa and 400 K is cooled to 200 K at constant volume. Its new pressure, in kilopascals, is ____**

ANSWER _____

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6 **Removing a product from a system at equilibrium shifts equilibrium toward the**

A reactants

B products

C catalyst

D neither side

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7 **At standard temperature and pressure, the volume, in liters, of 0.5 mol of gas is ____**

ANSWER _____

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8 **Breaking chemical bonds is an**

A exothermic process only

B exothermic process in gases

C endothermic process

D process with no energy change

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9 **A gas at 100 kPa occupies 12 L at 300 K. At 200 kPa and 600 K, its volume, in liters, is ____**

ANSWER _____

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10 **Entropy increases when**

A a gas condenses to a liquid

B a liquid freezes

C a solid dissolves in water

D a gas is compressed

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ANSWER KEY

1.	300	**5.**	100	**9.**	12
2.	D	**6.**	B	**10.**	C
3.	8400	**7.**	11.2		
4.	A	**8.**	C		

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