

#97 In an experiment, 1975 Joules of heat are added to a 35.6 gram sample of steam. By how many $^{\circ}\text{C}$ does the steam increase?

- (A) 27.5°C (B) 13.3°C
(C) 27.1°C (D) 55.5°C

#98 In an experiment, 2290 Joules of heat are added to a sample of ice and the temperature goes up by 18.5°C . What is the mass of the ice?

- (A) 61.3 g (B) 29.6 g
(C) 124 g (D) 60.4 g

#99 How many grams of ice will melt at 0°C if the ice absorbs 420. J of energy?

- (A) 0.186 g (B) 0.795 g
(C) 1.26 g (D) 5.38×10^4 g

#100 Approximately how many Joules of heat are required to change the temperature of 25.5 grams of water from 37.0°C to 45.8°C ?

- (A) 453 J (B) 460 J (C) 938 J (D) 224 J

QOD #101 & 102

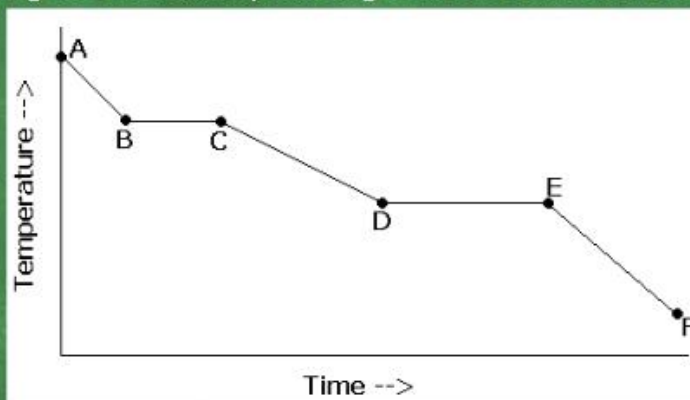
At 1 atm of pressure, the steam-water equilibrium occurs at a temperature of

- (A) 0 K (B) 100 K (C) 273 K (D) 373 K

The graph below represents the uniform cooling of a substance, starting with the substance as a gas above its boiling point.

During which interval is the substance completely in the liquid phase?

- (A) AB (B) BC
(C) CD (D) DE



#103 How many grams of ice can be melted at 0.00°C if 1575 Joules of heat are added to it?

- (A) 0.697 g (B) 4.72 g (C) 377 g (D) 768 g

#104 By how many degrees will the temperature of 45.8 grams of water change when 1775 Joules of heat are added to it?

- (A) 4.67°C (B) 9.27°C (C) 18.9°C (D) 19.2°C

#105 Which solution is the most concentrated?

- (A) 1 mole of solute dissolved in 1 liter of solution
(B) 2 mole of solute dissolved in 3 liters of solution
(C) 6 mole of solute dissolved in 4 liters of solution
(D) 4 mole of solute dissolved in 8 liters of solution

#106 When 20. milliliters of 1.0 M HCl is diluted to a total volume of 60. milliliters, the concentration of the resulting solution is

- (A) 3.0 M (B) 0.50 M (C) 0.33 M (D) 0.25 M

#107 What is the net ionic equation for the following reaction?
 $\text{Na}_2\text{CO}_3 (\text{aq}) + \text{Al}(\text{NO}_3)_3 (\text{aq}) \rightarrow \text{Al}_2(\text{CO}_3)_3 (\text{s}) + \text{NaNO}_3 (\text{aq})$

(A) $\text{Al}^{+3}(\text{aq}) + \text{CO}_3^{-2}(\text{aq}) \rightarrow \text{Al}_2(\text{CO}_3)_3 (\text{s})$
(B) $\text{Al}^{+3}(\text{aq}) + \text{C}^{+4}(\text{aq}) + \text{O}^{-2}(\text{aq}) \rightarrow \text{Al}_2(\text{CO}_3)_3 (\text{s})$
(C) $\text{Na}^{+1}(\text{aq}) + \text{NO}_3^{-1}(\text{aq}) \rightarrow \text{NaNO}_3 (\text{s})$
(D) $\text{Na}^{+1}(\text{aq}) + \text{N}^{-3}(\text{aq}) + \text{O}^{-2}(\text{aq}) \rightarrow \text{NaNO}_3 (\text{s})$

#108 How many grams of $\text{Sr}(\text{NO}_3)_2$ must be dissolved in order to make 350. mL of a 3.25 M solution?

(A) 241 g (B) 225 g
(C) 1.14 g (D) 170. g