NERAL CHEMISTRY I/ جميع الشعب

on 1
t
red
d out of
g
on

Calculate the standard enthalpy of formation of $PCl_3(g)$ in kJ/mol

$1/2\ P_4(s) + 3\ Cl_2(g) \rightarrow 2\ PCl_3(g)$ $\Delta H = -639.4$ kJ

Note: most stable form of P element is $P_4(s)$.

Select one:

- a. 0.00
- b. -287.0
- c. -213.1
- d. -319.7
- e. -639.4

4

ut of

Use the following to calculate the mass of $H_2O(g)$ would be obtained if the reaction released 369 kJ of heat. Molar mass of H_2O = 18.0 g/mol

$C_3H_8(g) + 5\ O_2(g) \rightarrow 3\ CO_2(g) + 4\ H_2O(g)\ \Delta H = -2043$ kJ

Select one:

- a. 99.8 g
- b. 13.0 g
- c. 3.25 g
- d. 0.814 g
- e. 18.0 g

ous page

Next page

NERAL CHEMISTRY I/ جميع الشعب

tion 3
et
ered
ed out of
ag
tion

A mixture of gases contains 4.7 mol of N_2 gas and 2.7 mol of Ar gas. If the total pressure of the mixture was 2.8 atm, what would be the partial pressure of N_2 (in atm.) ?

Select one:

- a. 0.64
- b. 1.0
- c. 1.4
- d. 2.8
- e. 1.8

Next page

evious page

In a constant volume calorimeter, a 0.836 g of hexane (C_6H_{14}) are burned, the calorimeter temperature rises from 25.00 °C to 26.95 °C. The heat capacity of the calorimeter and its contents was 20.7 kJ/ °C. What is the enthalpy of combustion for one mole of hexane? Molar mass of C_6H_{14} = 86.18 g/mol

Select one:

- a. - 5.58 x 10^7
- b. - 39.98
- c. - 557.7
- d. - 0.3915
- e. - 4161.3

Next page

age

Question **5**

Not yet answered

Marked out of 1.5

Flag question

What is the enthalpy (in kJ) of the following reaction at constant pressure?

$CH_4(g) + NH_3(g) \rightarrow HCN(g) + 3H_2(g)$

Use the following thermochemical equations:

$N_2(g) + 3H_2(g) \rightarrow 2NH_3(g)$ $\Delta H = -91.8$ kJ

$C(\text{graphite}) + 2H_2(g) \rightarrow CH_4(g)$ $\Delta H = -74.9$ kJ

$H_2(g) + 2C(\text{graphite}) + N_2(g) \rightarrow 2HCN(g)$ $\Delta H = +270.3$ kJ

Select one:

- a. -301.9
- b. +164.2
- c. +103.6
- d. +253.3
- e. +256.0

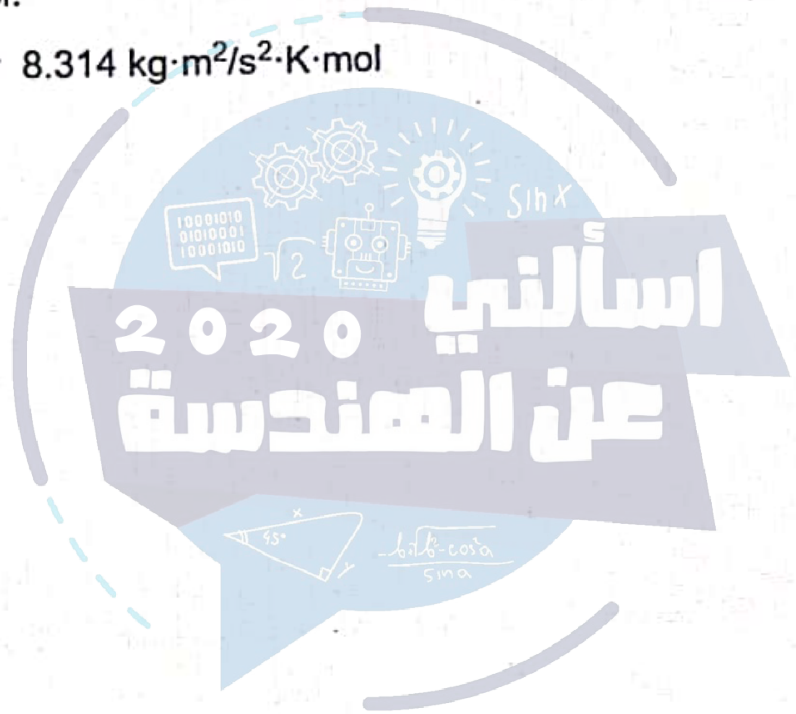
tion 6
et
ered
ed out of
ag
tion

A 0.590 gram of volatile liquid was vaporized at 96 °C and expanded in 200 ml flask at 800 mmHg. Calculate the molar mass of this liquid in g/mol.

R = 0.082 atm.L/mol.K or 8.314 $kg \cdot m^2/s^2 \cdot K \cdot mol$

Select one:

- a. 84.9
- b. 68.1
- c. 73.0
- d. 60.7
- e. 78.1



Next

vious page

ERAL CHEMISTRY I/ جميع الشعب

The volume of certain amount of nitrogen at 23°C and 746 mmHg is 10.1 cm^3 . What is the volume of nitrogen at 25 °C and 820 mmHg ?

Select one:

- a. 9.99
- b. 0.894
- c. 10.2
- d. 11.0
- e. 9.25

Next page

NERAL CHEMISTRY I/ جميع الشعب

stion 8
yet
vered
ked out of
lag
stion

Calculate the rms speed (in m/s) of He (molar mass = 4.0 g/mol) molecules in a cylinder at 27 °C and 8.7 atm.

R = 0.082 atm.L/mol.K or 8.314 $kg \cdot m^2/s^2 \cdot K \cdot mol$

Select one:

- a. 406.0
- b. 136.0
- c. 1367.7
- d. 12.8
- e. 42.8

Which of the following statements is incorrect according to the molecular kinetic theory?

Select one:

- a. Gas molecules frequently collide with one another by inelastic collisions.
- b. Gases are composed of molecules whose size is negligible compared with the average distance between them.
- c. Gas molecules exert neither attractive nor repulsive forces on one another.
- d. Gas molecules are in constant motion in random directions.
- e. The average kinetic energy of the molecules is proportional only to the temperature of the gas in kelvins.

Next page

NERAL CHEMISTRY I/ جميع الشعب

on 10
t
red
d out of
n

The work done when a gas is compressed in a cylinder is 366 J. During this process, there is a heat transfer of 173 J from the gas to the surroundings. Calculate the energy change for this process (in J).

Select one:

- a. +539
- b. -539
- c. +193
- d. +732
- e. -193

Finish attempt ...

ous page