

Question 1

+2

-0.66

Heat produced in calories by the combustion of one gram of carbon is called

A: Heat of combustion of carbon

B: Heat of formation of carbon

C: Calorific value of carbon

D: Heat of production of carbon

Question 2

+2

-0.66

The temperature of the system decreases in an:

A: Adiabatic Compression.

B: Isothermal Compression.

C: Isothermal Expansion.

D: Adiabatic Expansion.

Question 3

+2

-0.66

For the isothermal expansion of an ideal gas:

A: E and H increases.

B: E increases but H decreases.

C: H increases and E decreases.

D: E and H are unaltered.

Question 4

+2

-0.66

In an isochoric process, the increased internal energy is:

A: Equal to the heat absorbed.

B: Equal to heat evolved.

C: Equal to the work done.

D: Equal to sum of heat absorbed and work done.

Question 5

+2

-0.66

Internal energy is an example of:

A: Path Function

B: State Function

C: Both a and b

D: None of these

Question 6

+2

-0.66

The process in which no heat enters or leaves the system is termed as:

A: Isochoric

B: Isobaric

C: Isothermal

D: Adiabatic

Question 7

+2

-0.66

If in a container, neither mass nor heat exchange occurs, then it constitutes:

A: Closed System

B: Open System

C: Isolated System

D: Imaginary System

Question 8

+2

-0.66

Which of the following is true for an adiabatic process:

A: $\Delta H = 0$

B: $\Delta W = 0$

C: $\Delta Q = 0$

D: $\Delta V = 0$

Question 9

+2

-0.66

Among the following, intensive property is:

A: Mass

B: Volume

C: Surface Tension

D: Enthalpy

Question 10

+2

-0.66

For the reaction of one mole of zinc dust with one mole of sulphuric acid in a bomb calorimeter, ΔU and W correspond to:

A: $\Delta U < 0, W = 0$

B: $\Delta U = 0, W < 0$

C: $\Delta U > 0, W = 0$

D: $\Delta U = 0, W > 0$

Question 11

+2

-0.66

Which of the following expressions represent the first law of thermodynamics:

A: $\Delta E = -q + W$

B: $\Delta E = q - W$

C: $\Delta E = q + W$

D: $\Delta E = -q - W$

Question 12

+2

-0.66

At 270C one mole of an ideal gas is compressed isothermally and reversibly from a pressure of 2 atm to 10 atm. The value of ΔE and q are ($R = 2$):

A: 0, -965.84 cal

B: -965.84 cal, -865.58 cal

C: 865.58 cal, -865.58 cal

D: -865.58 cal, -865.58 cal

Question 13

+2

-0.66

The heat required to raise the temperature of a body by 1K is called:

A: Specific Heat

B: Thermal Capacity

C: Water Equivalent

D: None of these

Question 14

+2

-0.66

Which of the following is true for the reaction:

$\text{H}_2\text{O (l)} \rightleftharpoons \text{H}_2\text{O}$ at 100°C at one atmosphere:

A: $\Delta E = 0$

B: $\Delta H = 0$

C: $\Delta H = \Delta E$

D: $\Delta H = T\Delta S$

Identify the correct statement regarding entropy:

A: At 0°C , the entropy of a perfectly crystalline substance is taken to be zero

B: At absolute zero of the temperature, the entropy of all perfectly crystalline substance is positive

C: At absolute zero of the temperature the entropy of all perfectly crystalline substance is taken to be zero

D: At absolute zero temperature, the entropy of a perfectly crystalline substance is taken to be zero

Question 16

+2

-0.66

Maximum entropy will be in which of the following:

A: Ice

B: Liquid Water

C: Snow

D: Water Vapours

If enthalpies of formation C_2H_4 (g), CO_2 (g) and H_2O (l) at 25°C and 1 atm. pressure be 52, -394 and -286 KJ mol^{-1} respectively. The enthalpy of combustion of C_2H_4 (g) will be:

A: $+ 1412 \text{ KJ mol}^{-1}$

B: $- 1412 \text{ KJ mol}^{-1}$

C: $+ 141.2 \text{ KJ mol}^{-1}$

D: $- 141.2 \text{ KJ mol}^{-1}$

Question 18

+2

-0.66

Heat of neutralization of strong acid and weak base is:

A: 57.1 KJ mol^{-1}

B: 13.7 KJ mol^{-1}

C: Less than $13.7 \text{ Kcal mol}^{-1}$

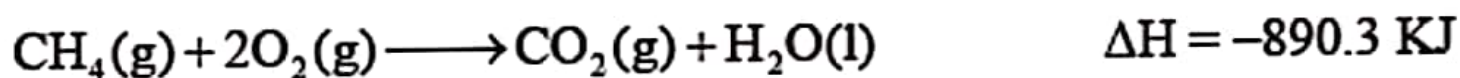
D: More than $13.7 \text{ Kcal mol}^{-1}$

Question 19

+2

-0.66

The heat evolved in the combustion of methane is given by the following equations:



How many grams of methane would be required to produce 444.15 KJ of heat of combustion:

A: 4 g

B: 8 g

C: 12 g

D: 16 g

In a calorimeter, the temperature of the calorimeter increases by 6.12K, the heat capacity of the system is 1.23 KJ/g/deg. What is the molar heat of decomposition of NH_4NO_3 :

A: $-7.53 \text{ KJ mol}^{-1}$

B: $-398.1 \text{ KJ mol}^{-1}$

C: $-16.1 \text{ KJ mol}^{-1}$

D: -602 KJ mol^{-1}