NOVA SCOTIA ADVANCED CHEMISTRY 12 · UNIT A · 25 QUESTIONS

Thermochemical Changes — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **200 millilitres of water, density 1 gram per millilitre, are heated by 15 degrees Celsius. Using 4.2 joules per gram per degree Celsius, the heat absorbed, in joules, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

2 **250 millilitres of water, density 1 gram per millilitre, are heated by 20 degrees Celsius. Using 4.2 joules per gram per degree Celsius, the heat absorbed, in joules, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **100 millilitres of water, density 1 gram per millilitre, are heated by 25 degrees Celsius. Using 4.2 joules per gram per degree Celsius, the heat absorbed, in joules, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **16 grams of methane, molar mass 16 grams per mole, release 800 kilojoules on burning. The molar enthalpy of combustion, in kilojoules per mole, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **32 grams of methane, molar mass 16 grams per mole, release 1800 kilojoules on burning. The molar enthalpy of combustion, in kilojoules per mole, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **8 grams of methane, molar mass 16 grams per mole, release 720 kilojoules on burning. The molar enthalpy of combustion, in kilojoules per mole, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

7 **Three steps have enthalpy changes of -100, -200 and -50 kilojoules per mole. The overall enthalpy change, in kilojoules per mole, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

8 **Three steps have enthalpy changes of -80, -120 and -100 kilojoules per mole. The overall enthalpy change, in kilojoules per mole, is**

ANSWER

Understand It with Pulse | Flag a mistake

9 **Three steps have enthalpy changes of -200, 50 and -150 kilojoules per mole. The overall enthalpy change, in kilojoules per mole, is**

ANSWER

Understand It with Pulse | Flag a mistake

10 **2 kilograms of water absorb 84 kilojoules. Using 4.2 kilojoules per kilogram per degree Celsius, the temperature rise, in degrees Celsius, is**

ANSWER

Understand It with Pulse | Flag a mistake

11 **5 kilograms of water absorb 210 kilojoules. Using 4.2 kilojoules per kilogram per degree Celsius, the temperature rise, in degrees Celsius, is**

ANSWER

Understand It with Pulse | Flag a mistake

12 **1 kilograms of water absorb 63 kilojoules. Using 4.2 kilojoules per kilogram per degree Celsius, the temperature rise, in degrees Celsius, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

13 **84 kilojoules warm water by 10 degrees Celsius. Using 4.2 kilojoules per kilogram per degree Celsius, the mass of water, in kilograms, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

14 **210 kilojoules warm water by 10 degrees Celsius. Using 4.2 kilojoules per kilogram per degree Celsius, the mass of water, in kilograms, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

15 **126 kilojoules warm water by 15 degrees Celsius. Using 4.2 kilojoules per kilogram per degree Celsius, the mass of water, in kilograms, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

16 **Breaking bonds needs 500 kilojoules and forming bonds releases 800 kilojoules. The enthalpy change, in kilojoules, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

17 **Breaking bonds needs 700 kilojoules and forming bonds releases 900 kilojoules. The enthalpy change, in kilojoules, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

18 **Breaking bonds needs 900 kilojoules and forming bonds releases 1000 kilojoules. The enthalpy change, in kilojoules, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

19 **Bond energy calculations estimate enthalpy change as**

A energy to break bonds - energy from forming bonds

B energy from forming bonds only

C total bond energy

D average bond energy only

Understand It with Pulse | Flag a mistake

20 **The enthalpy of combustion is defined for**

A any mass burning

B one mole of substance burning completely

C one gram burning

D a solution reacting

Understand It with Pulse | Flag a mistake

21 **In an energy profile diagram the peak represents the**

A products

B reactants

C activated complex

D catalyst

Understand It with Pulse | Flag a mistake

22 **A catalyst changes a reaction rate by providing a route with**

A higher activation energy

B no activation energy

C higher enthalpy

D lower activation energy

Understand It with Pulse | Flag a mistake

23 **For a reaction with enthalpy change -300 kilojoules per mole, the reaction is**

A exothermic

B endothermic

C neutral

D impossible

Understand It with Pulse | Flag a mistake

24 **Calorimetry with a polystyrene cup assumes the cup absorbs**

A all the heat

B negligible heat

C no water

D most reactants

Understand It with Pulse | Flag a mistake

25 **Standard conditions for enthalpy values are**

A 0 kelvin only

B 100 degrees Celsius

C 100 kilopascals and 298 kelvin

D any conditions

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	12600	**10.**	10	**19.**	A
2.	21000	**11.**	10	**20.**	B
3.	10500	**12.**	15	**21.**	C
4.	-800	**13.**	2	**22.**	D
5.	-900	**14.**	5	**23.**	A
6.	-1440	**15.**	2	**24.**	B
7.	-350	**16.**	-300	**25.**	C
8.	-300	**17.**	-200		
9.	-300	**18.**	-100		

© 2026 Brett Robbins. All Rights Reserved.