THERMOCHEMISTRY · PRACTICE TEST | NEW BRUNSWICK CHEMISTRY 121-122 · UNIT A · 25 QUESTIONS

Thermochemistry — 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 **Water of mass 100 grams warms by 10 degrees Celsius. Using a specific heat of 4.2 joules per gram degree, the heat absorbed in joules is**

ANSWER _____

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2 **Water of mass 50 grams warms by 20 degrees Celsius. Using a specific heat of 4.2 joules per gram degree, the heat absorbed in joules is**

ANSWER _____

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3 **Water of mass 200 grams warms by 5 degrees Celsius. Using a specific heat of 4.2 joules per gram degree, the heat absorbed in joules is**

ANSWER _____

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4 **A reaction releases 5000 joules to 100 grams of water. Using a specific heat of 4.2, the temperature change in degrees Celsius to one decimal place is**

ANSWER _____

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5 **A reaction has an enthalpy change of -200 kilojoules per mole. For 2 moles the total enthalpy change in kilojoules is**

ANSWER _____

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6 **A reaction has an enthalpy change of 100 kilojoules per mole. For 3 moles the total enthalpy change in kilojoules is**

ANSWER _____

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7 **By Hess law two steps have enthalpy changes of -100 and -50 kilojoules. The total enthalpy change in kilojoules is**

ANSWER _____

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8 **By Hess law two steps have enthalpy changes of 80 and -30 kilojoules. The total enthalpy change in kilojoules is**

ANSWER _____

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9 **A fuel releases 4000 kilojoules per mole and 0.5 moles burn. The energy released in kilojoules is**

ANSWER _____

Understand It with Pulse | Flag a mistake

10 **A calorimeter contains 250 grams of water that warms by 4 degrees. Using a specific heat of 4.2, the heat in joules is**

ANSWER _____

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11 **An endothermic reaction absorbs 600 joules. The sign of its enthalpy change is positive, represented by the value 1 for positive and -1 for negative. The value is**

ANSWER _____

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12 **Bond breaking requires 400 kilojoules and bond forming releases 650 kilojoules. The net enthalpy change in kilojoules is**

ANSWER _____

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13 **An exothermic reaction releases energy to the**

A surroundings

B system only

C reactants only

D catalyst

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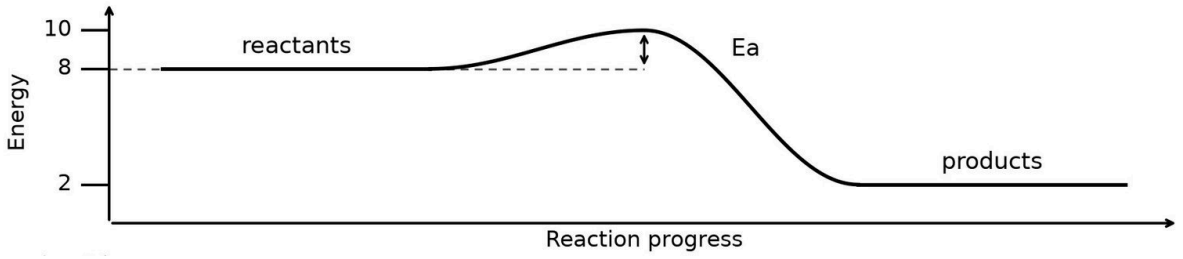
14 **The diagram shows products lower than reactants. The reaction is**



A endothermic

B exothermic

C at equilibrium

D catalysed only

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15 **Activation energy is the minimum energy needed for**

A bond forming only

B a catalyst

C a successful collision

D equilibrium

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16 **A catalyst speeds a reaction by providing a pathway with**

A higher activation energy

B more reactants

C less product

D lower activation energy

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17 **Enthalpy is measured at constant**

A pressure

B volume only

C temperature only

D mass

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18 **In a calorimetry experiment heat lost by the reaction equals heat gained by the**

A air only

B water

C container only

D thermometer

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19 **The standard enthalpy of formation of an element in its standard state is**

A negative always

B positive always

C zero

D 100 kilojoules

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20 **Hess law works because enthalpy is a**

A path function

B rate function

C equilibrium function

D state function

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21 **Breaking bonds is always**

A exothermic

B endothermic

C neutral

D spontaneous

Understand It with Pulse | Flag a mistake

22 **Forming bonds is always**

A endothermic

B exothermic

C neutral

D spontaneous

Understand It with Pulse | Flag a mistake

23 **A temperature increase in the surroundings during a reaction suggests the reaction is**

A endothermic

B at equilibrium

C exothermic

D reversible only

Understand It with Pulse | Flag a mistake

24 **The unit of enthalpy change is**

A joules per second

B moles per litre

C kilojoules per gram only

D kilojoules per mole

Understand It with Pulse | Flag a mistake

25 **A cooling curve for water freezing shows a plateau at**

A 0 degrees Celsius

B 100 degrees Celsius

C 25 degrees Celsius

D -10 degrees Celsius

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. 4200
2. 4200
3. 4200
4. 11.9
5. -400
6. 300
7. -150
8. 50
9. 2000
10. 4200
11. 1
12. -250
13. A
14. B
15. C
16. D
17. A
18. B
19. C
20. D
21. B
22. B
23. C
24. D
25. A

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