CHEMISTRY 3202 · NEWFOUNDLAND AND LABRADOR

Chemistry 3202

Practice Test

Unit A: Reaction Kinetics and Chemical Equilibrium

25 Questions

Original practice test based on the Newfoundland and Labrador curriculum. Work through each question, then check your answers at the end.

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.

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Question 1

The rate of a chemical reaction is best defined as the change in concentration per unit of

A) time

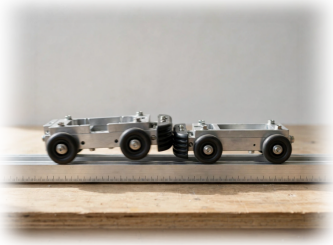
B) mass

C) volume

D) pressure alone

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Question 2

According to collision theory, a reaction occurs only when particles collide with sufficient

A) mass and correct colour

B) energy and correct orientation

C) volume and correct shape

D) temperature and correct pressure

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Question 3

Activation energy is the minimum energy needed for reactants to form the

A) products at once

B) catalyst

C) activated complex

D) equilibrium mixture

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Question 4

A catalyst increases reaction rate by providing a pathway with lower

A) product energy only

B) reactant mass

C) equilibrium constant

D) activation energy

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Question 5

A catalyst is best described as a substance that speeds a reaction and is

A) not consumed overall

B) consumed completely

C) changed into product

D) used only once

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Question 6

Increasing temperature usually increases reaction rate mainly because more particles have

A) lower mass

B) energy above activation energy

C) larger volume

D) less orientation

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Question 7

Increasing reactant concentration increases rate mainly because collisions occur

A) less often

B) with less energy

C) more often

D) in a different vessel

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Question 8

Increasing the surface area of a solid reactant increases rate because more particles are

A) exposed to collisions

B) dissolved completely

C) heated evenly

D) converted to gas

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Question 9

At chemical equilibrium, the forward and reverse reaction rates are

A) equal

B) zero

C) at a maximum

D) unrelated

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Question 10

At equilibrium, the concentrations of reactants and products are

A) equal to each other

B) constant over time

C) zero

D) changing rapidly

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Question 11

For an exothermic reaction, increasing temperature shifts equilibrium toward the

A) products

B) catalyst

C) reactants

D) solids only

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Question 12

Adding more reactant to a system at equilibrium shifts equilibrium toward the

A) reactants

B) catalyst

C) gases only

D) products

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Question 13

Removing a product from a system at equilibrium shifts equilibrium toward the

A) products

B) reactants

C) catalyst

D) solids only

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Question 14

An equilibrium constant much greater than 1 indicates that at equilibrium, products are

A) absent

B) favoured

C) equal to reactants

D) unstable

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Question 15

Increasing pressure on a gaseous equilibrium shifts it toward the side with

A) more moles of gas

B) more solids

C) fewer moles of gas

D) higher temperature

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Question 16

A reactant concentration falls by 0.6 moles per litre in 30 seconds. The average rate in moles per litre per second is

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Question 17

A product concentration rises by 0.9 moles per litre in 45 seconds. The average rate in moles per litre per second is

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Question 18

For a reaction A plus B to C, equilibrium concentrations are C 0.8, A 0.4 and B 0.2 moles per litre. The equilibrium constant 0.8 divided by the product 0.4 times 0.2 is

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Question 19

For a reaction, equilibrium concentrations are product 0.6 and reactant 0.3 moles per litre. The ratio product divided by reactant is

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Question 20

A reaction rate doubles for each 10 degree rise. Starting at 2 units, after a 30 degree rise the rate in units is

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Question 21

A reactant starts at 2.0 moles per litre and falls to 0.5 moles per litre. The change in moles per litre is

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Question 22

A reaction produces 0.04 moles per litre per second for 50 seconds. The concentration produced in moles per litre is

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Question 23

At equilibrium, product concentration is 1.2 moles per litre and reactant concentration is 0.4 moles per litre. The ratio is

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Question 24

A rate is 0.05 moles per litre per second. The time in seconds to produce 1.5 moles per litre is

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Question 25

A concentration falls from 1.6 to 0.4 moles per litre in 60 seconds. The average rate in moles per litre per second is

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ANSWER KEY

1.	A	**10.**	B	**18.**	9.999999999999998
2.	B	**11.**	C	**19.**	2
3.	C	**12.**	D	**20.**	16
4.	D	**13.**	A	**21.**	1.5
5.	A	**14.**	B	**22.**	2
6.	B	**15.**	C	**23.**	3
7.	C	**16.**	0.02	**24.**	30
8.	A	**17.**	0.02	**25.**	0.020000000000000004
9.	A				

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