FINAL EXAM - PRACTICE TEST | NEW BRUNSWICK CHEMISTRY 121-122 · FINAL EXAM · 50 QUESTIONS

Final Exam — Practice Test

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1 **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 _____

Understand It with Pulse | Flag a mistake

2 **A solution has 3 moles of solute in 2 litres. Its concentration in moles per litre is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **A solution has hydrogen ion concentration 0.00001 moles per litre. Its pH is**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **A benzene ring is an example of an**

- A alkane
- B alkene only
- C aromatic compound
- D alcohol

Understand It with Pulse | Flag a mistake

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

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **A 0.5 molar solution is diluted from 2 litres to 4 litres. The new concentration in moles per litre is**

ANSWER _____

Understand It with Pulse | Flag a mistake

7 **A solution has pOH 3. Its pH is**

ANSWER _____

Understand It with Pulse | Flag a mistake

8 **Alkanes contain only single bonds and are described as**

A saturated

B unsaturated

C aromatic

D ionic

Understand It with Pulse | Flag a mistake

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

ANSWER _____

Understand It with Pulse | Flag a mistake

10 **At equilibrium the forward rate equals the reverse rate. If the forward rate is 0.3, the reverse rate is**

ANSWER _____

Understand It with Pulse | Flag a mistake

11 **A titration uses 25 millilitres of 0.2 molar base. The moles of base in millimoles are**

ANSWER _____

Understand It with Pulse | Flag a mistake

12 **An alcohol with 2 carbon atoms has the formula C_2H_6O. The total atoms in one molecule is**

ANSWER _____

Understand It with Pulse | Flag a mistake

13 **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 _____

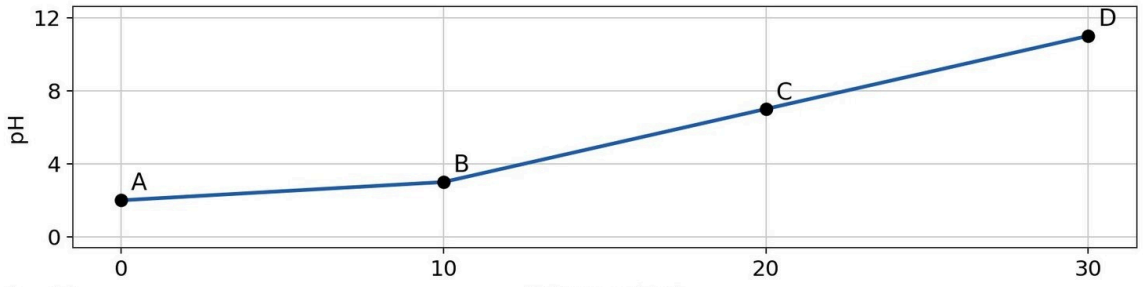
Understand It with Pulse | Flag a mistake

14 **A catalyst increases a rate by a factor of 4. A rate of 0.2 becomes**

ANSWER

Understand It with Pulse | Flag a mistake

15 **The titration graph rises sharply at 20 millilitres. The equivalence volume in millilitres is**



ANSWER

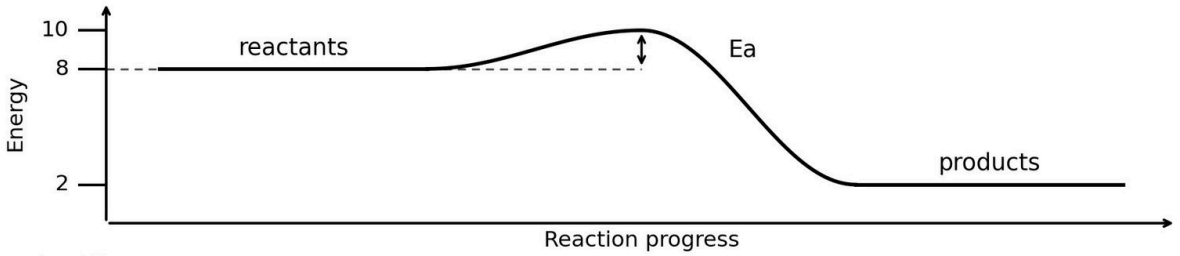
Understand It with Pulse | Flag a mistake

16 **Benzene has 6 carbon atoms and 6 hydrogen atoms. The total atoms in one molecule is**

ANSWER

Understand It with Pulse | Flag a mistake

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



- **A** endothermic
- **B** exothermic
- **C** at equilibrium
- **D** catalysed only

Understand It with Pulse | Flag a mistake

18 **Increasing surface area increases rate because more particles are**

- **A** heated
- **B** exposed
- **C** dissolved
- **D** charged

Understand It with Pulse | Flag a mistake

19 **A strong acid dissociates**

A partly

B not at all

C only on heating

D completely

Understand It with Pulse | Flag a mistake

20 **Esters are formed from an alcohol and a**

A alkane

B carboxylic acid

C alkene

D amine

Understand It with Pulse | Flag a mistake

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

A air only

B water

C container only

D thermometer

Understand It with Pulse | Flag a mistake

22 **Le Chatelier principle predicts a system at equilibrium shifts to**

A counteract a change

B increase the change

C stop reacting

D reach zero

Understand It with Pulse | Flag a mistake

23 **A buffer resists changes in**

A temperature

B pressure

C pH

D volume

Understand It with Pulse | Flag a mistake

24 **Ethanol is used as a fuel and a**

A solvent

B acid

C base

D salt

Understand It with Pulse | Flag a mistake

25 **Breaking bonds is always**

A exothermic

B endothermic

C neutral

D spontaneous

Understand It with Pulse | Flag a mistake

26 **Solubility of most solids in water increases with**

A pressure

B temperature

C volume

D mass

Understand It with Pulse | Flag a mistake

27 **An indicator changes colour over a narrow pH**

A temperature

B range

C volume

D mass

Understand It with Pulse | Flag a mistake

28 **Fractional distillation separates crude oil by**

A colour

B density only

C mass only

D boiling point

Understand It with Pulse | Flag a mistake

29 **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

30 **Collision theory requires collisions with sufficient energy and correct**

A temperature

B pressure

C volume

D orientation

Understand It with Pulse | Flag a mistake

31 **A solution has hydrogen ion concentration 0.0001 moles per litre. Its pH is**

ANSWER

Understand It with Pulse | Flag a mistake

32 **An alkane has 6 carbon atoms. The number of hydrogen atoms is**

ANSWER

Understand It with Pulse | Flag a mistake

33 **Water of mass 100 grams warms by 15 degrees Celsius. Using a specific heat of 4.2, the heat in joules is**

ANSWER

Understand It with Pulse | Flag a mistake

34 **A 3 molar solution of volume 2 litres contains how many moles**

ANSWER

Understand It with Pulse | Flag a mistake

35 **A solution has pOH 2. Its pH is**

ANSWER _____

Understand It with Pulse | Flag a mistake

36 **Polymerisation joins small monomers into long**

A rings only

B chains

C salts

D acids

Understand It with Pulse | Flag a mistake

37 **A fuel releases 3000 kilojoules per mole and 2 moles burn. The energy released in kilojoules is**

ANSWER _____

Understand It with Pulse | Flag a mistake

38 **At equilibrium products are 0.6 molar and reactants are 0.2 molar. The equilibrium constant is**

ANSWER _____

Understand It with Pulse | Flag a mistake

39 **A solution with pH 8 is basic by how many units above neutral pH 7**

ANSWER _____

Understand It with Pulse | Flag a mistake

40 **The functional group of a carboxylic acid is**

A hydroxyl

B carbonyl only

C amino

D carboxyl

Understand It with Pulse | Flag a mistake

41 **An endothermic reaction absorbs energy from the**

A surroundings

B products only

C catalyst

D reactants only

Understand It with Pulse | Flag a mistake

42 **Dissolving salt in water is fastest when the water is**

A stirred and warm

B still and cold

C still and warm

D cold and unstirred

Understand It with Pulse | Flag a mistake

43 **A solution with pH greater than 7 is**

A acidic

B neutral

C buffered

D basic

Understand It with Pulse | Flag a mistake

44 **The prefix eth indicates how many carbon atoms**

A 1

B 3

C 2

D 4

Understand It with Pulse | Flag a mistake

45 **A bomb calorimeter measures heat at constant**

A pressure

B temperature

C mass

D volume

Understand It with Pulse | Flag a mistake

46 **A decrease in temperature usually decreases rate because fewer collisions have**

A correct orientation

B enough mass

C enough volume

D enough energy

Understand It with Pulse | Flag a mistake

47 **Diluting an acid by a factor of 10 increases its pH by**

A ten units

B zero units

C one unit

D two units

Understand It with Pulse | Flag a mistake

48 **The suffix oic acid indicates a**

A carboxylic acid

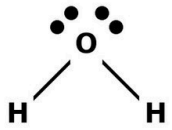
B alcohol

C alkane

D alkene

Understand It with Pulse | Flag a mistake

49 **The Lewis diagram shows water with two lone pairs on oxygen. The shape is**



A linear

B tetrahedral

C bent

D trigonal planar

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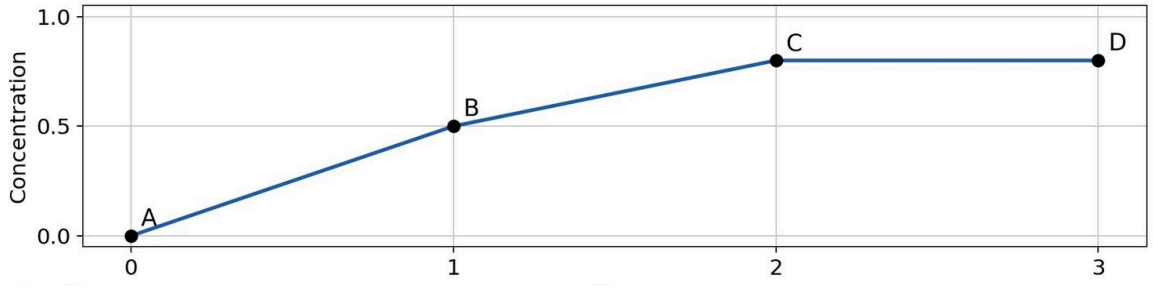
50 **The diagram shows product concentration levelling off. The plateau indicates the system has reached**



- **A** completion
- **B** saturation only
- **C** equilibrium
- **D** catalysis

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	4200	**18.**	B	**35.**	12
2.	1.5	**19.**	D	**36.**	B
3.	5	**20.**	B	**37.**	6000
4.	C	**21.**	B	**38.**	3
5.	-400	**22.**	A	**39.**	1
6.	0.25	**23.**	C	**40.**	D
7.	11	**24.**	A	**41.**	A
8.	A	**25.**	B	**42.**	A
9.	50	**26.**	B	**43.**	D
10.	0.3	**27.**	B	**44.**	C
11.	5	**28.**	D	**45.**	D
12.	9	**29.**	D	**46.**	D
13.	1	**30.**	D	**47.**	C
14.	0.8	**31.**	4	**48.**	A
15.	20	**32.**	14	**49.**	C
16.	12	**33.**	6300	**50.**	C
17.	B	**34.**	6		

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