NOVA SCOTIA CHEMISTRY 12 · FINAL EXAM

Final Exam — Practice Test

Nova Scotia Chemistry 12 • 50 questions

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 **A mass of 200 grams of water is heated by 5 degrees Celsius. Using a specific heat capacity of 4.2 joules per gram per degree Celsius, the heat absorbed, in joules, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

2 **A solution has a hydrogen ion concentration of 0.0001 moles per litre. The pH is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **3 moles of solute are dissolved to make 1.5 litres of solution. The concentration, in moles per litre, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **A current of 5 amperes flows for 60 seconds. The charge transferred, in coulombs, is**

ANSWER

Understand It with Pulse | Flag a mistake

5 **1260 kilojoules of heat are released when 3 moles of a fuel burn. The molar enthalpy of combustion, in kilojoules per mole, is**

ANSWER

Understand It with Pulse | Flag a mistake

6 **A solution has pH 5. The pOH is**

ANSWER

Understand It with Pulse | Flag a mistake

7 **50 millilitres of 2.0 moles per litre solution are diluted to 200 millilitres. The new concentration, in moles per litre, is**

ANSWER

Understand It with Pulse | Flag a mistake

8 **A cell has a cathode reduction potential of 0.34 volts and an anode reduction potential of -0.44 volts. The cell potential, in volts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

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

ANSWER _____

Understand It with Pulse | Flag a mistake

10 **A solution has pH 4. The hydrogen ion concentration, in moles per litre, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

11 **The concentration of a reactant falls by 1.0 moles per litre in 25 seconds. The average rate, in moles per litre per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

12 **A current supplies 3 moles of electrons to a solution containing metal ions that each need 1 electrons to deposit. The moles of metal deposited are**

ANSWER

Understand It with Pulse | Flag a mistake

13 **Heat of 4200 joules warms 100 grams of water. Using 4.2 joules per gram per degree Celsius, the temperature rise, in degrees Celsius, is**

ANSWER

Understand It with Pulse | Flag a mistake

14 **For a reaction at equilibrium the product concentration is 0.9 moles per litre and each reactant concentration is 0.3 moles per litre. With one product and two reactants the equilibrium constant is**

ANSWER

Understand It with Pulse | Flag a mistake

15 **A salt has solubility 40 grams per 100 millilitres. The mass that dissolves in 50 millilitres is, in grams**

ANSWER

Understand It with Pulse | Flag a mistake

16 **A charge of 300 coulombs flows in 60 seconds. The current, in amperes, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

17 **Heat of 4200 joules warms water by 5 degrees Celsius. Using 4.2 joules per gram per degree Celsius, the mass of water, in grams, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

18 **A titration uses 30 millilitres of 0.1 moles per litre sodium hydroxide. The moles of hydroxide used are**

ANSWER _____

Understand It with Pulse | Flag a mistake

19 **A solution contains 10 grams of solute in 200 grams of solution. The percent by mass is**

ANSWER _____

Understand It with Pulse | Flag a mistake

20 **A current of 10 amperes flows for 9650 seconds. Using 96500 coulombs per mole of electrons, the moles of electrons are**

ANSWER

Understand It with Pulse | Flag a mistake

21 **A fuel sample of 20 grams releases 600 kilojoules when burned. The energy released per gram, in kilojoules per gram, is**

ANSWER

Understand It with Pulse | Flag a mistake

22 **An acid solution has concentration 0.4 moles per litre and ionised concentration 0.08 moles per litre. The percent ionisation is**

ANSWER

Understand It with Pulse | Flag a mistake

23 **Increasing temperature usually increases reaction rate because particles**

A collide more often with more energy

B move slower

C form bonds only

D decrease in number

Understand It with Pulse | Flag a mistake

24 **In a galvanic cell oxidation occurs at the**

A anode

B cathode

C salt bridge

D voltmeter

Understand It with Pulse | Flag a mistake

25 **A calorimeter measures heat change by measuring**

A pressure change only

B volume change only

C temperature change of a known mass

D colour change

Understand It with Pulse | Flag a mistake

26 **The conjugate base of hydrochloric acid is the**

A hydrogen ion

B hydroxide ion

C chloride ion

D sodium ion

Understand It with Pulse | Flag a mistake

27 **The rate of a reaction is fastest at the**

A end when products peak

B middle always

C start when temperature is lowest

D start when concentrations are highest

Understand It with Pulse | Flag a mistake

28 **In an electrolytic cell electrical energy is used to drive a**

A spontaneous reaction

B neutralisation

C precipitation only

D non spontaneous reaction

Understand It with Pulse | Flag a mistake

29 **An exothermic reaction**

A releases heat to the surroundings

B absorbs heat

C has no energy change

D needs constant heating

Understand It with Pulse | Flag a mistake

30 **A weak acid has a higher pH than a strong acid at the same concentration because it**

A ionises more

B ionises less

C has fewer moles

D is dilute only

Understand It with Pulse | Flag a mistake

31 **5 moles of solute are dissolved to make 2.5 litres of solution. The concentration, in moles per litre, is**

ANSWER

Understand It with Pulse | Flag a mistake

32 **A current of 4 amperes flows for 50 seconds. The charge transferred, in coulombs, is**

ANSWER

Understand It with Pulse | Flag a mistake

33 **A mass of 50 grams of water is heated by 20 degrees Celsius. Using a specific heat capacity of 4.2 joules per gram per degree Celsius, the heat absorbed, in joules, is**

ANSWER

Understand It with Pulse | Flag a mistake

34 **A solution has a hydrogen ion concentration of 0.1 moles per litre. The pH is**

ANSWER

Understand It with Pulse | Flag a mistake

35 **300 millilitres of 1.0 moles per litre solution are diluted to 600 millilitres. The new concentration, in moles per litre, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

36 **A cell has a cathode reduction potential of -0.25 volts and an anode reduction potential of -0.76 volts. The cell potential, in volts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

37 **Two steps have enthalpy changes of -200 and -200 kilojoules per mole. The overall enthalpy change, in kilojoules per mole, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

38 **A solution has pH 1. The hydrogen ion concentration, in moles per litre, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

39 **A salt has solubility 25 grams per 100 millilitres. The mass that dissolves in 200 millilitres is, in grams**

ANSWER _____

Understand It with Pulse | Flag a mistake

40 **A charge of 900 coulombs flows in 300 seconds. The current, in amperes, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

41 **Heat of 12600 joules warms 150 grams of water. Using 4.2 joules per gram per degree Celsius, the temperature rise, in degrees Celsius, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

42 **For a reaction at equilibrium the product concentration is 1.0 moles per litre and each reactant concentration is 0.5 moles per litre. With one product and two reactants the equilibrium constant is**

ANSWER _____

Understand It with Pulse | Flag a mistake

43 **A solution contains 20 grams of solute in 400 grams of solution. The percent by mass is**

ANSWER _____

Understand It with Pulse | Flag a mistake

44 **A current of 10 amperes flows for 28950 seconds. Using 96500 coulombs per mole of electrons, the moles of electrons are**

ANSWER _____

Understand It with Pulse | Flag a mistake

45 **A fuel sample of 10 grams releases 300 kilojoules when burned. The energy released per gram, in kilojoules per gram, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

46 **An acid solution has concentration 1.0 moles per litre and ionised concentration 0.1 moles per litre. The percent ionisation is**

ANSWER _____

Understand It with Pulse | Flag a mistake

47 **A precipitate forms when the ionic product exceeds the**

A pH

B solubility product

C rate constant

D activation energy

Understand It with Pulse | Flag a mistake

48 **In a zinc copper cell electrons flow from**

A copper to zinc

B zinc to copper

C the salt bridge to zinc

D the voltmeter to copper

Understand It with Pulse | Flag a mistake

49 Breaking chemical bonds

- A releases energy
- B needs no energy
- C absorbs energy
- D always forms heat

Understand It with Pulse | Flag a mistake

50 Adding a catalyst to an equilibrium mixture

- A shifts it to products
- B does not change the equilibrium position
- C shifts it to reactants
- D stops the reaction

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	4200	**18.**	0.003	**35.**	0.5
2.	4	**19.**	5	**36.**	0.51
3.	2	**20.**	1	**37.**	-400
4.	300	**21.**	30	**38.**	0.1
5.	-420	**22.**	20	**39.**	50
6.	9	**23.**	A	**40.**	3
7.	0.5	**24.**	A	**41.**	20
8.	0.78	**25.**	C	**42.**	4
9.	-200	**26.**	C	**43.**	5
10.	0.0001	**27.**	D	**44.**	3
11.	0.04	**28.**	D	**45.**	30
12.	3	**29.**	A	**46.**	10
13.	10	**30.**	B	**47.**	B
14.	10	**31.**	2	**48.**	B
15.	20	**32.**	200	**49.**	C
16.	5	**33.**	4200	**50.**	B
17.	200	**34.**	1		

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