NOVA SCOTIA ADVANCED CHEMISTRY 12 · FINAL EXAM · 50 QUESTIONS

Final Exam — 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 **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

2 **For a solution with hydrogen ion concentration 0.0000001 moles per litre, the pH value is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **1 moles of solute are dissolved to make 250 millilitres of solution. The concentration, in moles per litre, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **A current of 3 amperes flows for 10 minutes. The charge, in coulombs, 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 **A solution of pH 6 has a pOH of**

ANSWER _____

Understand It with Pulse | Flag a mistake

7 **What volume of 2.0 moles per litre stock is needed to make 1000 millilitres of 0.2 moles per litre solution, in millilitres**

ANSWER _____

Understand It with Pulse | Flag a mistake

8 **Two identical cells each of potential 1.56 volts are connected in series. The total potential, in volts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **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

10 **A solution has pOH 3. The hydroxide ion concentration, in moles per litre, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

11 **A reactant concentration falls from 1.2 to 0.6 moles per litre in 20 seconds. The average rate, in moles per litre per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

12 **0.5 moles of electrons deposit silver, molar mass 108 grams per mole, from silver ions needing 1 electron each. The mass deposited, in grams, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

13 **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

14 **At equilibrium a product concentration is 0.6 moles per litre and the reactant concentration is 0.3 moles per litre. For a reaction making 2 product particles from 1 reactant particle the equilibrium constant is**

ANSWER _____

Understand It with Pulse | Flag a mistake

15 **60 grams dissolve in 200 millilitres at saturation. The solubility, in grams per 100 millilitres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

16 **1 moles of electrons flow in 19300 seconds. Using 96500 coulombs per mole, the current, in amperes, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

17 **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

18 **25 millilitres of acid neutralise 20 millilitres of 0.1 moles per litre base in a 1 to 1 reaction. The acid concentration, in moles per litre, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

19 **A sample has 5 milligrams of solute in 1 kilograms of water. The concentration, in parts per million, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

20 **10 amperes flow for 9650 seconds depositing zinc, molar mass 65 grams per mole, from ions needing 2 electrons each. Using 96500 coulombs per mole, the mass deposited, in grams, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

21 **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

22 **A weak acid of concentration 0.4 moles per litre has hydrogen ion concentration 0.02 moles per litre. The acid dissociation constant is about**

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **For a second order reaction, doubling the reactant concentration**

- A quadruples the rate
- B doubles the rate
- C halves the rate
- D leaves the rate unchanged

Understand It with Pulse | Flag a mistake

24 **The standard cell potential is found under standard conditions of**

- A 1 mole per litre solutions and 298 kelvin
- B any concentration
- C 0 kelvin
- D 100 degrees Celsius

Understand It with Pulse | Flag a mistake

25 **In an energy profile, the peak represents the**

A products

B reactants

C activated complex

D catalyst

Understand It with Pulse | Flag a mistake

26 **A conjugate acid base pair differs by**

A one electron

B one neutron

C one proton

D one molecule

Understand It with Pulse | Flag a mistake

27 **The order of a reaction is found from**

- **A** the balanced equation only
- **B** the molar masses
- **C** the temperature only
- **D** experimental rate data

Understand It with Pulse | Flag a mistake

28 **The Faraday constant is about**

- **A** 9650 coulombs per mole
- **B** 6×10^{23} coulombs
- **C** 1 coulomb per mole
- **D** 96500 coulombs per mole of electrons

Understand It with Pulse | Flag a mistake

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

A energy to break bonds minus 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

30 **Diluting a weak acid equilibrium shifts ionisation to**

A decrease percent ionisation

B increase percent ionisation

C stop ionisation

D double concentration

Understand It with Pulse | Flag a mistake

31 **2 moles of solute are dissolved to make 1000 millilitres 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 5 minutes. The charge, in coulombs, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

33 **120 millilitres of water, density 1 gram per millilitre, are heated by 10 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

34 **For a solution with hydrogen ion concentration 0.0000000001 moles per litre, the pH value is**

ANSWER _____

Understand It with Pulse | Flag a mistake

35 **What volume of 2.0 moles per litre stock is needed to make 600 millilitres of 1.0 moles per litre solution, in millilitres**

ANSWER _____

Understand It with Pulse | Flag a mistake

36 **Two identical cells each of potential 2.2 volts are connected in series. The total potential, in volts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

37 **Three steps have enthalpy changes of -150, -150 and -100 kilojoules per mole. The overall enthalpy change, in kilojoules per mole, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

38 **A solution has pOH 4. The hydroxide ion concentration, in moles per litre, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

39 **45 grams dissolve in 150 millilitres at saturation. The solubility, in grams per 100 millilitres, is**

ANSWER

Understand It with Pulse | Flag a mistake

40 **3 moles of electrons flow in 19300 seconds. Using 96500 coulombs per mole, the current, in amperes, is**

ANSWER

Understand It with Pulse | Flag a mistake

41 **2 kilograms of water absorb 126 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

42 **At equilibrium a product concentration is 1.0 moles per litre and the reactant concentration is 0.5 moles per litre. For a reaction making 2 product particles from 1 reactant particle the equilibrium constant is**

ANSWER

Understand It with Pulse | Flag a mistake

43 **A sample has 30 milligrams of solute in 2 kilograms of water. The concentration, in parts per million, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

44 **5 amperes flow for 19300 seconds depositing zinc, molar mass 65 grams per mole, from ions needing 2 electrons each. Using 96500 coulombs per mole, the mass deposited, in grams, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

45 **Breaking bonds needs 800 kilojoules and forming bonds releases 1200 kilojoules. The enthalpy change, in kilojoules, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

46 **A weak acid of concentration 0.5 moles per litre has hydrogen ion concentration 0.05 moles per litre. The acid dissociation constant is about**

ANSWER _____

Understand It with Pulse | Flag a mistake

47 **A supersaturated solution contains more solute than the**

A solvent can hold ever

B saturated amount at that temperature

C mass of water

D volume allows

Understand It with Pulse | Flag a mistake

48 **Electrolysis of concentrated sodium chloride solution produces chlorine at the**

A cathode

B anode

C salt bridge

D voltmeter

Understand It with Pulse | Flag a mistake

49 **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

50 **Adding sodium chloride to a saturated solution of silver chloride lowers how much silver chloride can dissolve. The added chloride is called a**

A spectator ion

B common ion

C catalyst

D buffer

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	21000	**18.**	0.08	**35.**	300
2.	7	**19.**	5	**36.**	4.4
3.	4	**20.**	32.5	**37.**	-400
4.	1800	**21.**	-200	**38.**	0.0001
5.	-900	**22.**	0.001	**39.**	30
6.	8	**23.**	A	**40.**	15
7.	100	**24.**	A	**41.**	15
8.	3.12	**25.**	C	**42.**	2
9.	-300	**26.**	C	**43.**	15
10.	0.001	**27.**	D	**44.**	32.5
11.	0.03	**28.**	D	**45.**	-400
12.	54	**29.**	A	**46.**	0.005
13.	10	**30.**	B	**47.**	B
14.	1.2	**31.**	2	**48.**	B
15.	30	**32.**	1200	**49.**	C
16.	5	**33.**	5040	**50.**	B
17.	5	**34.**	10		

© 2026 Brett Robbins. All Rights Reserved.