BRITISH COLUMBIA CHEMISTRY 11 (MCH--11) · 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 **Which molecule is polar**

- A CO_2
- B CH_4
- C N_2
- D H_2O

Understand It with Pulse | Flag a mistake

2 **The molar mass of water, H_2O, is**

- A 16 g
- B 18 g
- C 20 g
- D 34 g

Understand It with Pulse | Flag a mistake

3 **In the balanced equation $2H_2+O_2 \rightarrow 2H_2O$, the sum of all coefficients is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **A solution contains 2 moles of solute in 0.5 litre of solution. Its concentration, in moles per litre, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **An atom loses two electrons to form an ion. The charge on the ion is**

A 2-

B 2+

C 0

D 1-

Understand It with Pulse | Flag a mistake

6 **Carbon dioxide has molar mass 44 g per mole. The mass of 3 moles of carbon dioxide, in grams, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

7 **Which aluminium chloride equation is balanced**

A $2Al + 3Cl_2 \rightarrow 2AlCl_3$

B $Al + Cl_2 \rightarrow AlCl_3$

C $2Al + Cl_2 \rightarrow 2AlCl_3$

D $Al + 3Cl_2 \rightarrow AlCl_3$

Understand It with Pulse | Flag a mistake

8 **To make 500 mL of a 0.2 mole per litre solution from a 2 mole per litre stock solution, the volume of stock needed, in mL, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **The graph shows first ionization energy across period 2, from lithium at A to neon at H. The element with the highest value is at point**

- A A
- B C
- C F
- D H

Understand It with Pulse | Flag a mistake

10 **Sodium chloride has molar mass 58.5 g per mole. The mass of 2 moles of sodium chloride, in grams, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

11 **When zinc reacts with hydrochloric acid to form zinc chloride and hydrogen, the reaction type is**

- **A** double replacement
- **B** synthesis
- **C** single replacement
- **D** decomposition

Understand It with Pulse | Flag a mistake

12 **The graph shows the solubility of potassium nitrate in water at different temperatures. The solubility at 60 degrees, in the graph units, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

13 **Sulfur is in group 16. The number of valence electrons it has is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

14 **One mole of oxygen molecules, O_2, contains this many moles of oxygen atoms**

A 1

B 2

C 3

D 4

Understand It with Pulse | Flag a mistake

15 **In a closed container, 10 g of reactant A reacts with 15 g of reactant B to form one product. The mass of product, in grams, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

16 **Methane is a hydrocarbon with formula**

A CH_4

B C_2H_6

C CH_3OH

D CO_2

Understand It with Pulse | Flag a mistake

17 **Magnesium forms Mg^{2+} and oxygen forms O^{2-}. The formula of the compound formed is**

A MgO_2

B Mg_2O

C MgO

D Mg_2O_2

Understand It with Pulse | Flag a mistake

18 **In water, H_2O, the percent by mass of hydrogen is about**

A 5.6

B 11.1

C 22.2

D 88.9

Understand It with Pulse | Flag a mistake

19 **$2H_2 + O_2 \rightarrow 2H_2O$.**
With 10 moles of hydrogen and 3 moles of oxygen, the amount of water formed, in moles, is ____

ANSWER _____

Understand It with Pulse | Flag a mistake

20 **An organic compound containing the hydroxyl group, OH, is an**

- A alkane
- B alkene
- C alcohol
- D alkyne

Understand It with Pulse | Flag a mistake

21 **In a water molecule, the oxygen atom has this many lone pairs of electrons**

- A 0
- B 1
- C 2
- D 3

Understand It with Pulse | Flag a mistake

22 **A compound has empirical formula CH_2O and molar mass 180 g per mole. Its molecular formula is**

A $C_6H_{12}O_6$

B $C_3H_6O_3$

C $C_2H_4O_2$

D CH_2O

Understand It with Pulse | Flag a mistake

23 **A reaction has a theoretical yield of 20 g and an actual yield of 17 g. The percent yield is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

24 **A three carbon alkane is named**

A propane

B propene

C butane

D pentane

Understand It with Pulse | Flag a mistake

25 **Water has a central oxygen atom bonded to two hydrogen atoms and two lone pairs. The shape of the molecule is**

A linear

B trigonal planar

C tetrahedral

D bent

Understand It with Pulse | Flag a mistake

26 **The molar mass of ammonia, NH_3, is 17 g per mole. The mass of 4 moles of ammonia, in grams, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

27 **The graph shows the amount of product formed during a reaction. The amount at 3 minutes, in the graph units, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

28 **When diluting a concentrated acid, the safe practice is**

A. to add water to acid quickly

B. to add acid to water, slowly and with stirring

C. to pour acid down the sink

D. to heat the acid first

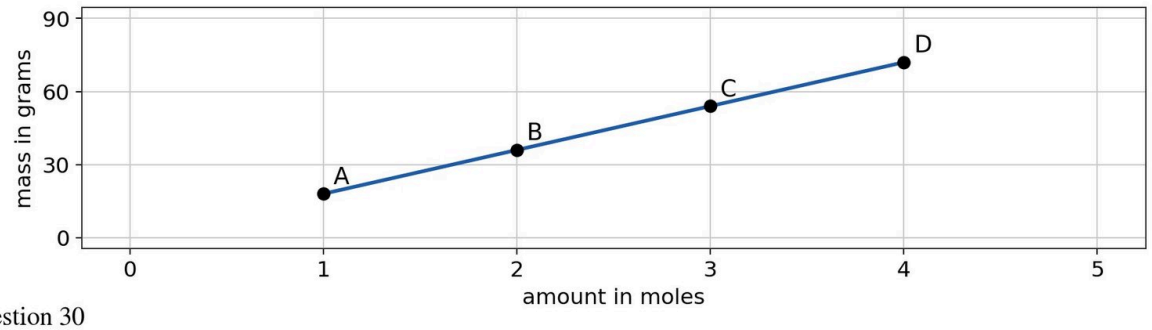
Understand It with Pulse | Flag a mistake

29 **A sodium atom has one valence electron. In its Lewis symbol, the number of dots shown is**

- **A** 2
- **B** 8
- **C** 11
- **D** 1

Understand It with Pulse | Flag a mistake

30 **The graph shows mass against amount for water. The mass at 3 moles, in grams, is _____**



Question 30

The graph shows mass against amount for water. The mass at 3 moles, in grams, is ____

ANSWER _____

Understand It with Pulse | Flag a mistake

31 **Which equation is a balanced synthesis reaction**

- **A** $N_2 + 3H_2 \rightarrow 2NH_3$
- **B** $N_2 + H_2 \rightarrow 2NH_3$
- **C** $N_2 + 3H_2 \rightarrow NH_3$
- **D** $2N_2 + 3H_2 \rightarrow 2NH_3$

Understand It with Pulse | Flag a mistake

32 **A solution contains 3 moles of solute in 1.5 litres of solution. Its concentration, in moles per litre, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

33 **Boron trifluoride has a central boron atom bonded to three fluorine atoms and no lone pairs. The shape of the molecule is**

A bent

B tetrahedral

C linear

D trigonal planar

Understand It with Pulse | Flag a mistake

34 **Methane has molar mass 16 g per mole. The amount in 32 g of methane, in moles, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

35 **When hydrogen peroxide breaks down into water and oxygen, the reaction type is**

A synthesis

B combustion

C decomposition

D double replacement

Understand It with Pulse | Flag a mistake

36 **To make 250 mL of a 0.4 mole per litre solution from a 2 mole per litre stock solution, the volume of stock needed, in mL, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

37 **Which substance is a covalent compound**

- A CO_2
- B NaCl
- C MgO
- D $CaCl_2$

Understand It with Pulse | Flag a mistake

38 **In magnesium oxide, MgO, the percent by mass of magnesium is**

- A 40.0
- B 60.0
- C 50.0
- D 33.3

Understand It with Pulse | Flag a mistake

39 $N_2 + 3H_2 \rightarrow 2NH_3$.

The amount of ammonia formed from 6 moles of hydrogen, in moles, is _____

ANSWER

Understand It with Pulse | Flag a mistake

40 **Ethane is a hydrocarbon with formula**

A C_2H_4

B C_3H_8

C C_2H_2

D C_2H_6

Understand It with Pulse | Flag a mistake

41 **Beryllium chloride has a central beryllium atom bonded to two chlorine atoms and no lone pairs. The shape of the molecule is**

- A bent
- B linear
- C tetrahedral
- D trigonal pyramidal

Understand It with Pulse | Flag a mistake

42 **A compound has empirical formula CH_2 and molar mass 56 g per mole. Its molecular formula is**

- A C_2H_4
- B C_3H_6
- C C_4H_8
- D C_5H_{10}

Understand It with Pulse | Flag a mistake

43 **A reaction has a theoretical yield of 40 g and an actual yield of 38 g. The percent yield is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

44 **An organic compound containing a carbonyl group in the middle of the chain is a**

A alcohol

B ketone

C alkane

D carboxylic acid

Understand It with Pulse | Flag a mistake

45 **Which liquid has the highest boiling point, because its molecules form strong hydrogen bonds**

- **A** H_2O
- **B** H_2S
- **C** CH_4
- **D** CO_2

Understand It with Pulse | Flag a mistake

46 **Hydrogen peroxide has molar mass 34 g per mole. The amount in 17 g of hydrogen peroxide, in moles, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

47 **In a combustion reaction, a hydrocarbon reacts with oxygen to form**

A carbon dioxide and water

B carbon monoxide only

C hydrogen gas and oxygen

D a salt and water

Understand It with Pulse | Flag a mistake

48 **Hot glass looks the same as cold glass, so you should**

A grab it quickly

B check before picking it up

C cool it with your hand

D leave it on the bench forever

Understand It with Pulse | Flag a mistake

49 **The graph shows atomic radius down group 1, from lithium at A to caesium at E. The radius at point C, in the graph units, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

50 **The graph shows mass against amount for magnesium oxide. The mass at 2 moles, in grams, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. D
2. B
3. 5
4. 4
5. B
6. 132
7. A
8. 50
9. D
10. 117
11. C
12. 110
13. 6
14. B
15. 25
16. A
17. C
18. B
19. 6
20. C
21. C
22. A
23. 85
24. A
25. D
26. 68
27. 24
28. B
29. D
30. 54
31. A
32. 2
33. D
34. 2
35. C
36. 50
37. A
38. B
39. 4
40. D
41. B
42. C
43. 95
44. B
45. A
46. 0.5
47. A
48. B
49. 227
50. 80

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