QUEBEC CHEMISTRY, SECONDARY V · FINAL EXAM · 50 QUESTIONS

Final Exam — Practice Test

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1 **A gas at pressure 100 kilopascals occupies 8 litres. At constant temperature its volume is changed to 4 litres. Its new pressure, in kilopascals, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

2 **Use the specific heat capacity of water as 4.19 joules per gram per degree Celsius. A sample of 100 grams of water warms by 10 degrees Celsius. The heat absorbed, in joules, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **A reactant has a half life of 10 minutes. Starting with 80 grams, after 20 minutes the mass remaining, in grams, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **At equilibrium a reaction A plus B gives C plus D has concentrations A 0.5, B 0.5, C 1.0, D 1.0 moles per litre. The equilibrium constant Kc is**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **A gas at pressure 100 kilopascals is at 300 kelvin. At constant volume its temperature is changed to 600 kelvin. Its new pressure, in kilopascals, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **A reaction can be built from two steps with enthalpy changes -80 kilojoules per mole and -120 kilojoules per mole. By Hess law the overall enthalpy change, in kilojoules per mole, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

7 **The slope of a concentration-time relationship is steepest when the rate is**

A highest

B lowest

C zero

D constant

Understand It with Pulse | Flag a mistake

8 **A reaction at equilibrium has 3 moles of reactants and 2 moles of products. The total amount, in moles, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **A gas mixture has total pressure 200 kilopascals and one gas has partial pressure 80 kilopascals. The partial pressure of the remaining gas, in kilopascals, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

10 **Activation energy is the minimum energy colliding particles need to**

A melt

B dissolve

C evaporate

D react

Understand It with Pulse | Flag a mistake

11 **An inhibitor is a substance that**

A speeds a reaction

B slows a reaction

C heats a reaction

D colours a reaction

Understand It with Pulse | Flag a mistake

12 **A system at dynamic equilibrium has forward and reverse rates that are**

A equal

B both zero

C unrelated

D maximal

Understand It with Pulse | Flag a mistake

13 **Increasing the temperature of a gas increases the average kinetic energy of its**

A container

B colour

C mass

D particles

Understand It with Pulse | Flag a mistake

14 **An exothermic reaction transfers 500 joules to the surroundings. The surroundings gain, in joules**

ANSWER _____

Understand It with Pulse | Flag a mistake

15 **Enzymes are biological catalysts made of**

A salt

B sugar only

C protein

D fat only

Understand It with Pulse | Flag a mistake

16 **Adding more reactant to an equilibrium system shifts it toward the**

A products

B reactants

C catalyst

D solids

Understand It with Pulse | Flag a mistake

17 **Compressing a gas into a smaller volume at constant temperature increases its**

A temperature only

B mass

C volume

D pressure

Understand It with Pulse | Flag a mistake

18 **Combustion of a fuel is an example of an**

A exothermic reaction

B endothermic reaction

C neutral reaction

D reversible reaction only

Understand It with Pulse | Flag a mistake

19 **For most reactions a temperature rise of 10 degrees Celsius roughly doubles the**

A rate

B mass

C volume

D pressure

Understand It with Pulse | Flag a mistake

20 **At equilibrium, a closed system is required so that reactants and products cannot**

A react

B escape

C mix

D cool

Understand It with Pulse | Flag a mistake

21 **A gas at pressure 120 kilopascals occupies 5 litres. At constant temperature its pressure is changed to 300 kilopascals. Its new volume, in litres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

22 **Heat flows spontaneously from a hotter object to a**

A hotter object

B colder object

C larger object

D smaller object

Understand It with Pulse | Flag a mistake

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

A hidden inside

B melted

C exposed to collisions

D dissolved

Understand It with Pulse | Flag a mistake

24 **For an exothermic reaction, lowering the temperature favours the**

A products

B reactants

C catalyst

D solids

Understand It with Pulse | Flag a mistake

25 **A gas at pressure 120 kilopascals is at 200 kelvin. At constant volume its temperature is changed to 400 kelvin. Its new pressure, in kilopascals, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

26 **Use the specific heat capacity of water as 4.19 joules per gram per degree Celsius. A sample of 200 grams of water warms by 5 degrees Celsius. The heat absorbed, in joules, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

27 **A reactant has a half life of 5 minutes. Starting with 100 grams, after 15 minutes the mass remaining, in grams, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

28 **At equilibrium a reaction A plus B gives C plus D has concentrations A 0.2, B 0.5, C 0.4, D 0.5 moles per litre. The equilibrium constant Kc is**

ANSWER _____

Understand It with Pulse | Flag a mistake

29 **A gas occupies 150 millilitres at 300 kelvin. At constant pressure its temperature is changed to 900 kelvin. Its new volume, in millilitres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

30 **A reaction releases 50 kilojoules per mole. For 4 moles the heat released, in kilojoules, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

31 **A reaction produces 150 cm³ of gas in 50 seconds. Its mean rate, in cm³ per second, is**

ANSWER

Understand It with Pulse | Flag a mistake

32 **At equilibrium a reaction A plus B gives C plus D has concentrations A 1.0, B 0.5, C 1.0, D 1.0 moles per litre. The equilibrium constant Kc is**

ANSWER

Understand It with Pulse | Flag a mistake

33 **A gas occupies 250 millilitres at 250 kelvin. At constant pressure its temperature is changed to 500 kelvin. Its new volume, in millilitres, is**

ANSWER

Understand It with Pulse | Flag a mistake

34 **The difference in energy between products and reactants is the enthalpy**

A change

B activation

C formation

D combustion

Understand It with Pulse | Flag a mistake

35 **Pressure affects the rate of reactions involving gases because it changes their**

A colour

B mass

C concentration

D temperature

Understand It with Pulse | Flag a mistake

36 **For the reaction N_2 plus 3 H_2 gives 2 NH_3, increasing pressure favours the**

A reactants

B catalyst

C solids

D products

Understand It with Pulse | Flag a mistake

37 **Gay Lussac law relates the pressure of a gas to its absolute temperature at constant**

A mass

B colour

C volume

D speed

Understand It with Pulse | Flag a mistake

38 **The first law of thermodynamics states that energy cannot be created or**

A measured

B stored

C destroyed

D transferred

Understand It with Pulse | Flag a mistake

39 **The concentration of a reactant falls by 0.3 moles per litre in 10 seconds. The mean reaction rate, in moles per litre per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

40 **Increasing pressure shifts a gaseous equilibrium toward the side with fewer moles of**

A solid

B liquid

C gas

D catalyst

Understand It with Pulse | Flag a mistake

41 **Charles law states that at constant pressure the volume of a gas varies directly with its absolute**

A mass

B temperature

C pressure

D colour

Understand It with Pulse | Flag a mistake

42 **A calorimeter is insulated to reduce heat loss to the**

A reactants

B products

C thermometer

D surroundings

Understand It with Pulse | Flag a mistake

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

A end

B middle only

C start

D equilibrium only

Understand It with Pulse | Flag a mistake

44 **Pure solids and pure liquids are omitted from an equilibrium expression because their concentrations are**

A constant

B zero

C infinite

D unknown

Understand It with Pulse | Flag a mistake

45 **The molar volume of an ideal gas at standard temperature and pressure is about**

A 1 litre per mole

B 100 litres per mole

C 0 litres per mole

D 22.4 litres per mole

Understand It with Pulse | Flag a mistake

46 **The specific heat capacity of a substance is the heat needed to raise one gram by one**

A atmosphere

B degree Celsius

C mole only

D litre

Understand It with Pulse | Flag a mistake

47 **The concentration of a product rises by 1.0 moles per litre in 20 seconds. The mean reaction rate, in moles per litre per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

48 **The equilibrium constant changes only when the**

A pressure changes

B catalyst changes

C temperature changes

D volume changes

Understand It with Pulse | Flag a mistake

49 **To convert Celsius to Kelvin you**

A subtract 273

B add 273

C multiply by 273

D divide by 273

Understand It with Pulse | Flag a mistake

50 **Use the specific heat capacity of water as 4.19 joules per gram per degree Celsius. A sample of 200 grams of water absorbs 8380 joules. Its temperature rise, in degrees Celsius, is**

ANSWER

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	200	**18.**	A	**35.**	C
2.	4190	**19.**	A	**36.**	D
3.	20	**20.**	B	**37.**	C
4.	4	**21.**	2	**38.**	C
5.	200	**22.**	B	**39.**	0.03
6.	-200	**23.**	C	**40.**	C
7.	A	**24.**	A	**41.**	B
8.	5	**25.**	240	**42.**	D
9.	120	**26.**	4190	**43.**	C
10.	D	**27.**	12.5	**44.**	A
11.	B	**28.**	2	**45.**	D
12.	A	**29.**	450	**46.**	B
13.	D	**30.**	200	**47.**	0.05
14.	500	**31.**	3	**48.**	C
15.	C	**32.**	2	**49.**	B
16.	A	**33.**	500	**50.**	10
17.	D	**34.**	A		

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