

Random HW #8 — Fifteen More Random Regents questions, word for word, Jan 2018

16 Which sample of gas at STP has the same number of molecules as 6 liters of $\text{Cl}_{2(\text{G})}$ at STP?

1. 3 liters of $\text{O}_{2(\text{G})}$
2. 6 liters of $\text{N}_{2(\text{G})}$
3. 3 moles of $\text{O}_{2(\text{G})}$
4. 6 moles of $\text{N}_{2(\text{G})}$

17 A chemical reaction is most likely to occur when the colliding particles have the proper

1. energy and orientation
2. solubility and density
3. ionic radii and mass
4. atomic radii and volume

18 The energy absorbed and the energy released during a chemical reaction are best represented by a

1. cooling curve
2. heating curve
3. kinetic energy diagram
4. potential energy diagram

19 A catalyst increases the rate of a chemical reaction by

1. providing an alternate reaction pathway
2. providing the required heat of reaction
3. increasing the potential energy of the products
4. increasing the activation energy of the reaction

20 Which formula represents an alkyne?

1. C_nH_n
2. C_{2n}H_n
3. $\text{C}_n\text{H}_{2n+2}$
4. $\text{C}_n\text{H}_{2n-2}$

21 Which process involves the transfer of electrons?

1. double replacement
2. neutralization
3. oxidation-reduction
4. sublimation

22 Which change occurs at the anode in an operating electrochemical cell?

1. gain of protons
2. gain of electrons
3. loss of protons
4. loss of electrons

23 Which device requires electrical energy to produce a chemical change?

1. electrolytic cell
2. salt bridge
3. voltaic cell
4. voltmeter

24 Which substance is an Arrhenius acid? 1. HBr 2. NaBr 3. NaOH 4. NH_3

25 Which laboratory process is used to determine the concentration of one solution by using a volume of another solution of known concentration?

1. crystallization
2. distillation
3. filtration
4. titration

26 Which type of reaction occurs when $\text{H}^{+1}_{(\text{AQ})}$ reacts with $\text{OH}^{-1}_{(\text{AQ})}$?

1. combustion 2. decomposition 3. fermentation 4. neutralization

27 According to one acid-base theory, a molecule acts as an acid when the molecule

1. accepts an H^{+1} 3. donates an H^{+1}
2. accepts an OH^{-1} 4. donates an OH^{-1}

28 In which type of reaction can an atom of one element be converted to an atom of another element?

1. addition 2. reduction 3. substitution 4. transmutation

29 An unstable nucleus spontaneously releases a positron. This is an example of

1. radioactive decay 2. nuclear fusion 3. chemical decomposition 4. thermal conductivity

30 Which phrase describes a risk associated with producing energy in a nuclear power plant?

1. depletion of atmospheric hydrogen (H_2)
2. depletion of atmospheric carbon dioxide (CO_2)
3. production of wastes needing long-term storage
4. production of wastes that cool surrounding water supplies