

C3 Revision Questions

Higher only questions are in bold

Question 1 of 50

- What happens in a chemical reaction?

Answer 1 of 50

- Reactants are turned into products

Question 2 of 50

- How many of each element are in $\text{Fe}(\text{OH})_3$

Answer 2 of 50

- 1 Iron, 3 Oxygen, 3 Hydrogen

Question 3 of 50

- Give a reason why a reaction stops

Answer 3 of 50

- Runs out of reactants

Question 4 of 50

- What units do you measure the rate of reaction in?

Answer 4 of 50

- g/s or g/min
cm³/s or cm³/min

Question 5 of 50

- Name 5 ways that you can increase the rate of reaction

Answer 5 of 50

- Increase the concentration, increase temperature, increase surface area, use a catalyst, increase pressure

Question 6 of 50

- What are reactants?

Answer 6 of 50

- Chemicals that react together in a reaction

Question 7 of 50

- Give an example of a slow and a fast reaction

Answer 7 of 50

- Slow = rusting
Fast = explosion

Question 8 of 50

- What does a straight, sloped line represent on a rate of reaction graph?

Answer 8 of 50

- The reaction is occurring and product is being made

Question 9 of 50

- What could you do to increase the amount of product?

Answer 9 of 50

- Increase the amount of reactants

Question 10 of 50

- What does the rate of reaction depend on

Answer 10 of 50

- The number of collisions between particles

Question 11 of 50

- What are products?

Answer 11 of 50

- Molecules produced at the end of a reaction

Question 12 of 50

- What equipment do you need to measure the rate of reaction?

Answer 12 of 50

- Gas syringe and flask

Question 13 of 50

- What does a horizontal line represent on a rate of reaction graph?

Answer 13 of 50

- The reaction has stopped

Question 14 of 50

- How could you calculate the rate of reaction for a graph?

Answer 14 of 50

- Measure the gradient of the sloped line

Question 15 of 50

- Why does increasing temperature increase the rate of reaction?

Answer 15 of 50

- Particles have greater kinetic energy, so the number of collisions increase

Question 16 of 50

- What elements are in CaCO_3 ?

Answer 16 of 50

- Calcium, carbon and oxygen

Question 17 of 50

- Name 3 ways that the rate of reaction can be measured

Answer 17 of 50

- Volume of gas (product) made, mass of product formed, rate of product used

Question 18 of 50

- How can you tell from a graph if one reaction is quicker than another?

Answer 18 of 50

- The line is steeper

Question 19 of 50

- What is the limiting reactant?

Answer 19 of 50

- A chemical used up in a reaction that limits the amount of product formed

Question 20 of 50

- Why does increasing concentration increase the rate of reaction?

Answer 20 of 50

- Particles become more crowded, so there are more collisions

Question 21 of 50

- What elements are in H_2SO_4 ?

Answer 21 of 50

- Hydrogen, sulphur and oxygen

Question 22 of 50

- What is the units for reaction rate?

Answer 22 of 50

- Grams/ second

Question 23 of 50

- What is the reaction time?

Answer 23 of 50

- The time taken for the reactants to be used up

Question 24 of 50

- What do particles have to do for a reaction to happen?

Answer 24 of 50

- Collide

Question 25 of 50

- Why does increasing surface area increase the rate of reaction?

Answer 25 of 50

- Increased surface area, so there are more collisions

Question 26 of 50

- What is the equation for percentage yield?

Answer 26 of 50

- Actual yield
- Predicted yield x 100

Question 27 of 50

- What does 100% yield mean? What does 0% yield mean?

Answer 27 of 50

- 100% = no product has been lost
- 0% = no product has been made

Question 28 of 50

- What reasons are there for not receiving 100% yield

Answer 28 of 50

- Product lost in: filtration, evaporation, transferring liquid, not all reactants reacted

Question 29 of 50

- What is the equation for atom economy

Answer 29 of 50

- Mass of desired product / mass of total products x100.

Question 30 of 50

- Why do industrial process want a high yield and high atom economy?

Answer 30 of 50

- High yield = less reactant waste, lower cost.
- High atom economy = less waste, more sustainable

Question 31 of 50

- What is an exothermic reaction?

Answer 31 of 50

- Energy is released into the surroundings

Question 32 of 50

- What is an endothermic Reaction?

Answer 32 of 50

- Energy is absorbed from the surroundings

Question 33 of 50

- The temperature of the solution increases, is it exothermic or endothermic?

Answer 33 of 50

- exothermic

Question 34 of 50

- Describe bond making and bond breaking in terms of exo and endothermic.

Answer 34 of 50

- Bonding making = exothermic
- Bond breaking = endothermic

Question 35 of 50

- Describe how to calculate the energy transferred of a fuel combusted

Answer 35 of 50

- Use a spirit burner to hold fuel, heat water in copper container, measure mass of fuel burnt, measure temp change,

Question 36 of 50

- What is the energy transferred when 200g of water is heated from 20 to 40⁰C (SHC = 4.2)

Answer 36 of 50

- 16800J.
- $200 \times 4.2 \times 20$

Question 37 of 50

- What factors affect the cost of making and developing medical drugs?

Answer 37 of 50

- Research, labour, energy, raw materials, time taken, marketing

Question 38 of 50

- What can raw materials for drugs be made from?

Answer 38 of 50

- From plants or synthetically (man made)

Question 39 of 50

- Why do drugs need to be made as pure as possible?

Answer 39 of 50

- No side effects

Question 40 of 50

- What methods can you use to determine purity of a compound?

Answer 40 of 50

- Melting or boiling point, thin layer chromatography

Question 41 of 50

- Why are batch processes used to make drugs?

Answer 41 of 50

- Because drugs have a 'best before' date so cannot be stored. Batch processes are flexible to demands

Question 42 of 50

- How are chemicals extracted from plants?

Answer 42 of 50

- Crush the plants, boil them and dissolving in a solvent, then separating using chromatography

Question 43 of 50

- What is an allotrope?

Answer 43 of 50

- Different structures of the same element

Question 44 of 50

- What are the properties of a diamond?

Answer 44 of 50

- Shiny, transparent, hard, high melting point, insoluble, doesn't conduct electricity

Question 45 of 50

- What are the properties of graphite?

Answer 45 of 50

- Black, lustrous and opaque, slippery, insoluble, conducts electricity

Question 46 of 50

- What are nanotubes used for?

Answer 46 of 50

- Reinforce graphite in tennis rackets because they are strong. Used in semi conductors

Question 47 of 50

- Why is diamond used in cutting tools?

Answer 47 of 50

- Because it is hard and has a high melting point

Question 48 of 50

- Why is graphite used in pencil leads, lubricants

Answer 48 of 50

- Pencil lead = black, breaks off
- Lubricants = because it is slippery

Question 49 of 50

- Diamond and Graphite have a giant structure. What is meant by giant structure?

Answer 49 of 50

- Every atom is joined to another atom through strong covalent bonds, this gives strength in all directions and requires a lot of energy to break apart

Question 50 of 50

- What is the formula for buckminsterfullerene?
Why are they used to deliver drugs?

Answer 50 of 50

- C_{60} , can carry drug molecules inside them and deliver where needed