

## 28 Multiple choice questions

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- a chemical reaction in which energy is released from the surroundings (negative)
  - respiration
  - endothermic reaction
  - rate of reaction
  - exothermic reaction
- liquid is the process boiling, collecting and then cooling of the vapour to turn it back into liquid; it is used to purify liquids such as water
  - explosion
  - distillation
  - pollution
  - respiration
- the burning of a fuel; heat and usually light are produced
  - respiration
  - explosion
  - combustion
  - pollution
- a group of atoms forming part of the organic compound that influences the physical and chemical properties of the compound
  - functional group
  - natural gas
  - petroleum
  - distillation
- weak intermolecular forces between molecules
  - isomers
  - explosion
  - fossil fuels
  - dispersion forces

6. also referred to as the speed of a reaction, and may be expressed as the rate of decrease in the concentration of any reactant, or the rate of increase in the concentration of any product
  - a. exothermic reaction
  - b. rate of reaction
  - c. respiration
  - d. endothermic reaction
  
7. the lowest temperature at which a combustible substance will ignite and continue burning
  - a. activation energy
  - b. functional group
  - c. ignition temperature
  - d. isomers
  
8. a chemical reaction in which energy is absorbed from the surroundings (positive)
  - a. respiration
  - b. exothermic reaction
  - c. endothermic reaction
  - d. rate of reaction
  
9. the distillation of a liquid to separate the fractions with different boiling points present in the liquid; crude oil is fractionally distilled to obtain the various fractions, petrol kerosene etc.
  - a. functional group
  - b. distillation
  - c. rate of reaction
  - d. fractional distillation
  
10. a fossil fuel that is a mixture of mainly hydrocarbons; it is separated into the different fractions, which have different uses as fuel and for the synthesis of other compounds such as plastics
  - a. catalyst
  - b. isomers
  - c. petroleum
  - d. allotropes
  
11. a fossil fuel formed millions of years ago; it is burnt as fuel, usually in power stations
  - a. coal
  - b. IUPAC
  - c. catalyst
  - d. alkane

12. a substance that alters the rate of a chemical reaction but itself remains unchanged at the end of the reaction; since it remains effectively the same at the end of a reaction, only a small amount is required to catalyse the reaction; catalysts are specific for particular reactions
- catalyst
  - coal
  - volatility
  - alkane
13. the process by which plants use the energy from sunlight to convert carbon dioxide and water into oxygen and the energy-rich sugar, glucose; energy is stored as carbohydrates
- allotropes
  - catalyst
  - photosynthesis
  - pollution
14. the readiness of a liquid to vaporise or evaporate, especially at ordinary temperatures
- coal
  - catalyst
  - pollution
  - volatility
15. molecules that have the same molecular formula but different structural formulae (the atoms are arranged differently in the molecules)
- isomers
  - IUPAC
  - coal
  - catalyst
16. different forms of the same element in the same physical state; the atoms are arranged in different crystalline or molecular structures; consequently their physical properties, such as density, colour and hardness are different
- allotropes
  - fullerenes
  - alkane
  - pollution
17. the minimal amount of energy that reactant molecules must possess in order
- activation energy
  - distillation
  - ignition temperature
  - respiration

18. the very rapid combustion of a substance producing a sudden expansion of hot gases, accompanied by a shock wave that can shatter nearby objects
- pollution
  - combustion
  - respiration
  - explosion
19. energy rich substances formed in the earths crust over millions years through the action of heat and pressure on decaying plant and animal remains
- distillation
  - isomers
  - fullerenes
  - fossil fuels
20. a series of compounds, such as alkanes, that can represent a general molecular formula; they have similar and chemical properties
- fossil fuels
  - photosynthesis
  - homologous series
  - combustion
21. a gas formed naturally on earth and consists mainly of methane, with small amounts of ethane and other compounds; it is used as a fuel
- IUPAC
  - catalyst
  - petroleum
  - natural gas
22. a group of carbon structures with spherical or cylindrical shapes; they are an allotrope of carbon
- allotropes
  - fullerenes
  - alkane
  - isomers
23. a process occurring in living cells whereby stored energy is released and made available for use by the organism; glucose reacts with oxygen giving carbon dioxide and water; energy is released in the process; it is the reverse of the photosynthesis reaction
- explosion
  - distillation
  - respiration
  - combustion

24. the international union of pure and applied chemistry; this body draws up rules for systemic naming of compounds
- IUPAC
  - coal
  - alkane
  - isomers
25. caused by the burning of fossil fuels; the oxides of carbon, nitrogen and sulfur are formed and these are harmful
- combustion
  - distillation
  - pollution
  - explosion
26. simple hydrocarbon, such as methane or ethane, consisting of carbon and hydrocarbon atoms only with single bonds between carbon atoms
- IUPAC
  - fullerenes
  - alkane
  - coal
27. organic compounds that contain carbon, hydrogen and oxygen; examples are glucose starch and cellulose; they are produced in plants by photosynthesis; respiration breaks them down within the body
- respiration
  - catalyst
  - allotropes
  - carbohydrates
28. molecules that contain only carbon and hydrogen; the carbon chains can be of different lengths with different structure; straight chains, branching chains or rings
- explosion
  - isomers
  - respiration
  - hydrocarbons