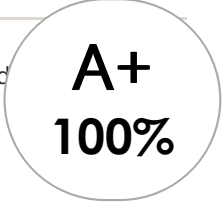


## 18 Multiple choice questions



**A+**  
**100%**

1. a grey or yellowish-white glassy or translucent crystalline material which tastes alkaline and is soluble in water; it effervesces with acids and produces water on heating in a closed tube

  - a. tallow
  - b. oleum
  - c. naptha
  - d. **CORRECT: trona**
2. a cluster of molecules; the long hydrocarbon chains of natural soaps are insoluble in water; they cluster together, attracted to each other by dispersion forces

  - a. glycerol
  - b. **CORRECT: micelle**
  - c. oleum
  - d. shellac
3. the reaction between an ester and hydroxide ion to form an alcohol and carboxylate ion; it is the hydrolysis of an ester under alkaline conditions; it refers to the alkaline hydrolysis of fats and oils, converting them into soap

  - a. **CORRECT: saponification**
  - b. surfactant
  - c. plastic
  - d. vulcanisation
4. a material able to act on another substance, changing its surface tension; the fatty acid ion in soap lowers the surface tension of water by disrupting hydrogen bonds between water molecules

  - a. plastic
  - b. trona
  - c. **CORRECT: surfactant**
  - d. smelting

5. a substance that has a high affinity for water; easily dissolves in water
- CORRECT: hydrophilic**
  - shellac
  - trona
  - hydrophobic
6. a brown flaky resin secreted by the lac insect; naturally thermoplastic, it is used with fillers to make molded articles and as an ingredient in paints, lacquers and polishers
- smelting
  - tallow
  - CORRECT: shellac**
  - micelle
7. a substance that has a low affinity for water; does not easily dissolve in water and may repel it
- plastic
  - hydrophilic
  - CORRECT: hydrophobic**
  - trona
8. a process of extracting a metal from its ore by heating the ore in a blast furnace; sulfide ores are generally roasted to convert them to oxides before smelting
- shellac
  - micelle
  - plastic
  - CORRECT: smelting**
9. also known as fuming sulfuric acid; it is 100% sulfuric acid containing dissolves SO<sub>3</sub>
- CORRECT: oleum**
  - glycerol
  - trona
  - tallow

10. a mixture of highly inflammable nitrate esters of cellulose, made by nitrating cotton or wood pulp; it is used in making celluloid
- micelle
  - reversible reaction
  - vulcanisation
  - CORRECT: nitrocellulose (cellulose nitrate)**
11. an alcohol, also called glycerine, which is a colourless, viscous liquid with a sweet taste; its fatty-acid esters constitute natural fats and oils, from which glycerol is obtained as a by-product of soap making; glycerol is a triol (an alkane with three -OH groups)
- micelle
  - tallow
  - oleum
  - CORRECT: glycerol**
12. a substance obtained by melting the harder and less fusible kinds of animal fat; it is used for making candles and soap, and for greasing machinery
- shellac
  - CORRECT: tallow**
  - naphtha
  - trona
13. the process of enhancing the durability of rubber by heating it with sulfur or sulfur compounds; vulcanisation involves the creation of sulfur bridges between the long-chain rubber polymer molecules
- CORRECT: vulcanisation**
  - plastic
  - surfactant
  - saponification
14. a reaction where the forward and reverse reactions occur at the same time
- vulcanisation
  - surfactant
  - CORRECT: reversible reaction**
  - saponification

15. a process for the manufacture of sodium carbonate; salt, ammonia, carbon dioxide and water react to give precipitated sodium bicarbonate (sodium hydrogen carbonate), which on heating gives sodium carbonate and carbon dioxide for recycling
- shellac
  - plastic
  - glycerol
  - CORRECT: Solvay process**
16. a volatile mixture of liquid hydrocarbons used as a solvent and obtained by distilling coal tar or shale oil or from refining and cracking petroleum; it has a boiling range of 80 to 180 degrees Celsius
- CORRECT: naphtha**
  - trona
  - plastic
  - tallow
17. if a system is at equilibrium and it is disturbed by changing some conditions, then the system will adjust itself so as to minimise this disturbance
- reversible reaction
  - CORRECT: Le Chatelier's principle**
  - micelle
  - hydrophilic
18. a material that can be molded into desired shapes
- oleum
  - naphtha
  - CORRECT: plastic**
  - tallow