

## 19 Multiple choice questions

---

1. the process by which chemicals and other particles are attracted to and held by a solid surface
  - a. flocculation
  - b. coagulation
  - c. adsorption
  - d. allotrope
  
2. an underground rock formation through which ground water can easily percolate; sandstone, gravel beds and jointed limestone make good aquifers
  - a. flocs
  - b. halogen
  - c. aquifer
  - d. coliform
  
3. a micro-organism occurring in the gut of warm-blooded animals; its cysts are more resistant to disinfection than are bacteria or viruses
  - a. coliform
  - b. cryptosporidium
  - c. coagulation
  - d. adsorption
  
4. the process of adding coagulants (chemicals or a mixture of chemicals) to cause particles that are slow to settle or are non-settling to settle out more readily; the coagulant reacts with the particles in the water, forming larger particles called flocs that settle out rapidly
  - a. adsorption
  - b. coagulation
  - c. coliform
  - d. flocculation
  
5. luminescence caused by a chemical reaction, usually oxidation; the molecules are excited to a high energy level and emit light as they return to the ground state
  - a. halogen
  - b. coagulation
  - c. haloalkane
  - d. chemiluminescence

6. a derivative of an alkane where one or more hydrogen atoms have been replaced by a halogen such as fluorine, chlorine, bromine or iodine
  - a. flocs
  - b. halogen
  - c. allotrope
  - d. haloalkane
7. a qualitative test for cations where a clean platinum wire mounted in a glass holder is dipped into the sample to be tested and then held in a non-luminous Bunsen flame; many cations burn with distinctive colour
  - a. aquifer
  - b. flame test
  - c. flocs
  - d. halogen
8. the process by which lakes and streams become enriched by dissolved nutrients, such as phosphates and nitrates found in fertilisers; this can result in an increased growth of algae in these waterways and a corresponding drop in dissolved oxygen; this condition can be harmful to other life forms living in these waters
  - a. eutrophication
  - b. coagulation
  - c. adsorption
  - d. flocculation
9. one of several structural forms of the same element in the same state; for example, diamond, graphite and fullerenes are allotropes
  - a. haloalkane
  - b. halogen
  - c. allotrope
  - d. adsorption
10. a covalent bond that has formed when one atom provides both electrons to form the shared bonding pair
  - a. coordinate covalent bond
  - b. chlorofluorocarbon
  - c. coagulation
  - d. complete combustion
11. decomposition without oxygen; many bacteria can carry out respiration without using oxygen; decomposition under these conditions produces gases and other wastes that would not be present in aerobic decomposition
  - a. anaerobic decomposition
  - b. adsorption
  - c. complete combustion
  - d. flocculation

12. is  $K$ ; when equilibrium is reached the concentration of reactants and products has no tendency to change; the concentrations of the products are written in the numerator and the concentrations of the reactants are written in the denominator; the larger value of  $K$ , the more the reactants react together to form product
- equilibrium constant
  - eutrophication
  - aquifer
  - flame test
13. the gentle mixing of chemicals with water containing suspended particles to trap colloidal particles such as mud; the chemicals join tiny particles of dirt, micro-organisms, and fine suspended matter so that they can be more easily filtered out; the larger particles formed can be filtered
- adsorption
  - eutrophication
  - flocculation
  - coagulation
14. larger particles formed during coagulation; they settle out rapidly and can be effectively removed by passing water through a filter; the process is controlled so that the coagulant chemicals are removed along with the contaminants
- flocs
  - coliform
  - halogen
  - allotrope
15. a type of bacteria found in raw water; coliforms are used as a microbiological indicator for the possible presence of other disease-producing organisms arising from faecal contamination; they are measured in colony forming units (CFU); a CFU is the number of bacterial cells, or clumps of cells, that can be developed into a colony when grown under laboratory conditions; coliforms are killed by chlorine
- coliform
  - allotrope
  - flocs
  - aquifer
16. a highly reactive non-metal in group VII of the periodic table; they include the elements fluorine, chlorine, bromine, iodine and astatine
- aquifer
  - halogen
  - flocs
  - haloalkane

17. a compound containing carbon, chlorine and fluorine
- flocculation
  - eutrophication
  - chlorofluorocarbon
  - coagulation
18. the chemical combination of hydrogen and nitrogen gases in the presence of a catalyst, and under high temperatures and pressures, to form ammonia
- flame test
  - haber process
  - halogen
  - allotrope
19. when a hydrocarbon burns in a plentiful oxygen supply and the combustion products are carbon dioxide and water
- complete combustion
  - eutrophication
  - flocculation
  - coagulation