

## Questions Module 2

### WATER TREATMENT

Mark the correct alternative in yellow. Note that the correct answers can be 1 or up to all 4 alternatives.

1. Which of the methods below are used to remove particles, from domestic wastewater?
  - a. Sedimentation
  - b. Filtration
  - c. Ozonation
  - d. Stripping
  
2. Which of the methods below are used to remove fat/floating substances from domestic wastewater?
  - a. Stripping
  - b. Skimming
  - c. Addition of lime
  - d. Flotation
  
3. Which of the methods below are primarily used to reduce organic matter measured as biochemical oxygen demand (BOD) in wastewater?
  - a. Chemical precipitation
  - b. Trickling filters
  - c. Rotating biological contactors
  - d. Activated sludge
  
4. Why is it important to remove organic matter (often measured as BOD) from wastewater prior to discharge?
  - a. It can cause oxygen depletion when organic matter is decomposed
  - b. It can cause a change in water flora and fauna
  - c. It can cause change in depth of sight
  - d. It is a direct nutrient for algae
  
5. What does BOD<sub>5</sub> mean?
  - a. That it is an average of 5 BOD samples
  - b. That the sample is an average of 5 samples taken at the same site with equal time intervals
  - c. That the sample is analysed after 5 days of storage
  - d. That the duration of the BOD test procedure in the laboratory is 5 days
  
6. Which of the methods below are primarily used remove Phosphorus from wastewater
  - a. Sand filtration
  - b. Addition of lime to the wastewater
  - c. Stripping
  - d. Addition of Fe- or Al-salts to the wastewater

7. What are possible negative effects of ammonia discharge to water?
  - a. Can cause reduction in the dissolved oxygen (DO) content
  - b. Can act as a nutrient for algae and plants
  - c. Can be toxic to fish
  - d. Can cause change of water color
  
8. Which of the methods below are primarily used to reduce ammonia in water?
  - a. Chemical precipitation
  - b. Biological treatment
  - c. Ion exchange
  - d. Stripping
  
9. How can you reduce the total nitrogen in wastewater more than 30%?
  - a. By struvite formation
  - b. By nitrification and denitrification
  - c. By stripping
  - d. By adding Fe- and Al salts
  
10. Which of the methods below can be used remove dissolved heavy metals from water
  - a. Ion exchange
  - b. Chemical precipitation
  - c. A grit chamber
  - d. A vortex chamber
  
11. Which of the methods below would you choose to remove organic micropollutants from water?
  - a. Chemical precipitation
  - b. Activated sludge
  - c. Ozonation
  - d. Nanofiltration
  
12. What is considered to be the main element triggering eutrophication in fresh water?
  - a. Potassium
  - b. Phosphorus
  - c. Sulphur
  - d. Nitrogen
  
13. What is considered to be the main element triggering eutrophication in the sea?
  - a. Potassium
  - b. Phosphorus
  - c. Sulphur
  - d. Nitrogen
  
14. What is black water?
  - a. Wastewater from showers and bath tub

- b. Wastewater from the kitchen sink
  - c. Wastewater/excreta from toilets only
  - d. Wastewater from industry
15. What was the first step of blackwater treatment in Bokenäs?
- a. A septic tank
  - b. Anaerobic digestion
  - c. A biofilter
  - d. Sedimentation
16. Where is the biogas produced in Bokenäs?
- a. In the biofilter
  - b. In the ponds
  - c. In the constructed wetland
  - d. In the anaerobic digestion chamber
17. What is the right sequence of the greywater treatment in Bokenäs
- a. Septic tank, biofilter, ponds, algae filter, wetland
  - b. Septic tank, ponds, biofilter, algae filter, wetland system
  - c. Biofilter, septic tank, algae filter, ponds, wetland
  - d. Biofilter, septic tank, wetland, algae filter, ponds
18. How long must excreta be stored, according to the WHO (WHO 2006), before use in agriculture at ambient temperature in Scandinavia?
- a. Six months
  - b. Two months
  - c. Two years
  - d. One week
19. What is the purpose of adding bulking material when composting excreta/faeces?
- a. To prevent smell
  - b. To reduce the moisture content
  - c. To improve the structure of the material
  - d. To prevent flies
20. Why is it interesting to separate urine and faeces
- a. Urine contains most of the nutrients in human excreta
  - b. Urine from healthy people is essentially sterile and needs less treatment/storage time than faeces
  - c. To reduce smell when composting/collecting faeces
  - d. Urine can be used directly as a fertilizer after 6 months of storage