

Questions Module 3

NATURAL SYSTEMS

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

1. Natural systems can be gravity driven. What does it mean that the system is gravity driven?
 - a. That the system operates with only one pump?
 - b. That water flows through the system due to differences in the gravitational head?
 - c. That the system is solar powered?
 - d. That the system needs no pump or other electric devices to operate?

2. Where does the main treatment happen in a soil infiltration system?
 - a. In the groundwater or saturated zone?
 - b. In the unsaturated zone?
 - c. In the gravel bed circumferencing the infiltration pipe?
 - d. In the septic tank?

3. Natural systems have treatment performance equal to and sometimes higher than a conventional technical treatment system as Bekkelaget. Why is it not possible to build one or a few large natural treatment system to treat the wastewater in Oslo?
 - a. Because the natural treatment system require large areas per person(1-20m²) and there is no space for that in Oslo?
 - b. Because a natural system in general is not considered in urban areas
 - c. Because a natural system smells
 - d. Because a natural system is very expensive

4. What is the role of plants in a constructed wetland
 - a. Provide oxygen to support aerobic processes in the bed
 - b. To enhance aesthetic appearance of bed
 - c. To enhance the hydraulic conductivity
 - d. All of the above

5. What do you consider the most important parameters that may influence the performance of the constructed wetland:
 - a. Depth of bed
 - b. Slope of the bed
 - c. Width of the bed
 - d. The hydraulic retention time

6. The P removal in wetland mostly depends upon the
 - a. The type of plants used

- b. The hydraulic load in the wetland
 - c. The type of media used
 - d. The characteristics of wastewater
7. The pollutants are removed in pond by the process of
- a. Settling and biological oxidation
 - b. Chemical oxidation
 - c. Mechanical straining
 - d. Both a and b
8. The normal configurations of pond systems are
- e. Anaerobic pond followed by facultative and then maturation pond
 - f. Maturation pond followed by anaerobic and then facultative pond
 - g. Facultative pond followed by aerobic and then maturation pond
 - h. Anaerobic and maturation pond