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**Assignment**

1. Paul, a resident in the outskirts of your town, consults you about building a latrine in the compound of his house. He is an open-minded man who is keen to improve life for his family. He has a wife and three young children, and his elderly mother also lives with them. He doesn’t have a tap in his house and gets water from a nearby well. The area has heavy soil and the rock below is impermeable.
2. Which types of latrine are possible choices for him?

Since he doesn’t have a piped supply of water, Aschalew cannot install a water carriage system; instead, he has to install a dry lagtrine system. The possible choices are a ventilated improved pit latrine, an Arborloo, a urine-diverting latrine or a biogas latrine.

1. Which types of latrine would you recommend, and why?

The ventilated improved pit latrine would be suitable, but if he has space and farms near him (since he is at the outskirts of town) a composting system is recommended, such as the Arborloo or urine-diverting latrine. This would produce useful organic compost and so protect the environment. In the urine-diverting latrine, a fertilizer from urine is also produced. Aschalew could sell these products to the farmers. The biogas latrine is not recommended because it is suitable only where there are a large number of users.

1. What other advice would you give him about the location, design and construction of the latrine?

The pit must be at least 30m away from his well, and it must also be at a lower level according to the slope of the land. He should also consider the wind direction and place the latrine downwind and at a convenient distance from the house. For the safety of the children, he should choose a SanPlat for the slab. He should seek advice about possible materials to be used for the superstructure. The materials should be available locally, so that the system is sustainable. He should install a handwashing facility next to the latrine.

1. Nancy is a laboratory technician. She is analyzing a sample of wastewater collected from a pipe that discharges effluent into a river.
2. Name two tests Worknesh could perform to assess the physical characteristics of the effluent.

To assess the physical characteristics, Worknesh could perform a suspended solids test. She could also measure the temperature of the sample and assess the odour. (Note that if she was measuring temperature she would have to do this at the point of origin because the temperature could change within a short time.)

1. As part of the analysis she also does a BOD test on the sample and gets an unusually high result. What does the high BOD tell her about the wastewater? What effect could it have on the river?

A high BOD test result would tell Worknesh that there was a lot of organic matter in the sample. If this was discharged into the river it would remove oxygen from the water, which would harm fish and other organisms living in the river.

1. What is the purpose of the report of a rapid assessment and who should receive copies of the report? Explain the contents of Rapid Assessment

The purpose of the report is to summarize the results from the assessment and indicate how well its aims have been achieved. After permission from the funders has been obtained, it should be sent to all those who had an interest in its findings. Apart from the funders, recipients could include:

* The Kebele administration
* Community representatives
* The local Health Extension Workers team
* Any non-governmental organizations (NGOs) or funding organizations who might be willing to finance or support a follow –on programme
* Any local WASH programmes.

1. Explain five ways in which urbanization creates challenges for effective sanitation and solid waste management.

**Some possible answers are:**

* Infectious diseases among crowded communities with substandard living
* Acute and cronic respiratory and other illnesses as a result of air pollution
* Chronic and non-communicable diseases that are on the rise with unhealthy urban lifestyles (physical inactivity, unhealthy diets, tobacco smoking, and the harmful use of alcohol)
* Injuries resulting from motor vehicle collisions, violence and crime
* Health risks related to climate change, such as heat stress and changed patterns of infectious disease, which are considered to be one of the biggest health risks in the twenty-first century.

1. How do good sanitation and waste management practices bring a positive effect to urban inhabitants? Give examples for effects on;
2. Effects on Health:

Good sanitation and waste management help to keep people separate from potential sources of pathogens. They reduce the risk of contaminating water supplies with pathogens and discourage the transmission of disease.

1. Effects on education:

Healthy children have fewer days off school through illness. When they are at school, healthy children learn better than sick children. Providing good sanitation facilities encourages children to attend school, particularly girls during their menstrual periods.

1. Effects on economic conditions:

The health benefits promoted by good sanitation and waste make for a more productive community. Less money is spent on healthcare and people lose fewer days off work through caring for the sick.

1. Effects on the environment:

Good sanitation and waste management means that there will be less faeces and waste deposited in public places and less pollution of the water and soil.

APA reference list

1. WHO (2004)