



INDIAN SCHOOL AL WADI AL KABIR



Class: VII	Department: SCIENCE 2022 - 23	Date: 25.08.2022
Worksheet No: 6	Topic: WATER: A PRECIOUS RESOURCE AND WASTEWATER MANAGEMENT	Note: A4 FILE FORMAT
NAME OF THE STUDENT:	CLASS & SEC:	ROLL NO:

I. VERY SHORT ANSWER TYPE QUESTIONS (1M)

1. What is infiltration? [Hint: The process of seeping of water into the ground.]
2. inhibits the seepage of rainwater into ground. [Hint: A cemented floor]
3. Name the chemical used to disinfect water. [Hint: Chlorine]
4. Some impurities are dissolved and suspended in water. What are they called?
[Hint: Contaminants]
5. What is the waste water released by houses called as? [Hint: Domestic sewage]
6. Name the solid form of water. [Hint: Ice]

For question numbers 7-9, two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below -

- i) Both A and R are true and R is the correct explanation of the assertion.
 - ii) Both A and R are true but R is not the correct explanation of the assertion.
 - iii) A is true but R is false.
 - iv) A is false but R is true
7. **Assertion (A):** The water table may be deep or shallow.
Reason (R): The lower layer of an aquifer is called as water table.
Ans: (iii) A is true but R is false.
 8. **Assertion (A):** Waste water is treated in sewage treatment plant.

Reason (R): Waste water is treated to remove harmful components and make it reusable.

Ans: i) Both A and R are true and R is the correct explanation of the assertion.

9. **Assertion (A):** Water is essential for all living things.

Reason (R): Water exists in three states-solid, liquid and gas.

Ans: ii) Both A and R are true but R is not the correct explanation of the assertion.

II. PASSAGE BASED QUESTIONS

Read the following passage and answer the questions:

Rainwater harvesting produces self-sufficiency to water supply. It also reduces the cost for pumping of ground water. The water will be of high quality, soft and low in minerals. It improves the quality of ground water through dilution when recharged. Rain water also reduces soil erosion and flooding in urban areas. The roof top water harvesting is less expensive and easy to construct, optimum and easy to maintain. No land is wasted for storage purposes and no population displacement is involved. Ground water is not directly exposed to evaporation and pollution. There is an effective rise in ground water levels and also mitigates the effects of drought.

1. Which form of water is not directly exposed to evaporation directly?

a) Rain water b) River water c) **Ground water** d) Roof top water

2. What is the consequence of rain water harvesting?

i) Effective rise in ground water ii) Mitigates the effect of drought iii) Causes pollution

iv) Flooding

a) **i and ii** b) ii and iii c) i and iv d) iii and iv

3. What does rain water harvesting provide?

a) Pumping b) **Self-sufficiency** c) Rains d) Floods

4. Rainwater harvesting reduces-----

a) **Soil erosion** b) Soil pollution c) Soil hardening d) Soil harvesting

III. CASE STUDY BASED QUESTIONS:

1. Sumit visited his village during holidays and noted that his uncle had installed Rain water harvesting system. His uncle informed him that the rain water is stored between layers of hard rock and below the water table from where water can be pumped out.

i) What is the water storage area known as? [Hint: The water storage area is known as Aquifer.]

ii) What do you mean by rain water harvesting? [Hint: The process in which rain water is collected and used to recharge ground water.]

2. Ravi and his father were travelling in a train. While going .Ravi saw a man throwing plastic packet in a river. By seeing this Ravi got disturbed. He asked his father about the reason for the same. His father explained about the proper waste water disposal method and the importance of handling and managing our waste.

i) What leads to water pollution? [Hint: Discharge of undesirable substances into water leads to water pollution.]

ii) Write down any four steps to prevent water pollution. [Hint: (a) Garbage should be recycled and not thrown into water bodies. (b) Excessive use of chemicals should be replaced by bio fertilisers or bio pesticides. (c) Organic wastes can be converted into bio gas. (d) Industrial wastes should be treated before releasing it into water bodies.]

IV. a) SHORT ANSWER TYPE QUESTIONS (2M)

1. What is water pollution? [Hint: Water pollution is the contamination of water by substances harmful to life. Discharge of undesirable substances into water leads to water pollution.]

2. What is an aquifer? [Hint: The ground water stored between layers of hard rock below the water table is called aquifer.]

3. Define the following terms:

(i) Waste water [Hint: The water mixed with impurities like soap, germs, dirt, oil etc.]

(ii) Biogas [Hint: Biogas is the mixture of gases produced by the breakdown of organic matter in the absence of oxygen, primarily consisting of methane and carbon dioxide.]

iii) Sewage [Hint: Sewage is waste water released by homes, industries, hospitals, offices and other users. It also includes rain water that has run down.]

4. Suggest any two methods to conserve water. [Hint: Rain water harvesting, constructing dams and reservoirs]

5. Name the primary steps involved in waste water treatment. [Hint: Screening, Grit removal, Sedimentation]

6. Mention any four sources of fresh water. [Hint: river, lake, pond, well]

7. Name any two disinfectants used in water treatment. [Hint: Chlorine and ozone.]

b) SHORT ANSWER TYPE QUESTIONS(3M)

1. Explain how the increase in population and industries are responsible for depletion of water table. [Hint: Increasing population causes demand for constructions, parks, pavements etc. which needs lots of water. We consume more ground water and do not allow water to seep into the ground, thus causing water table depletion. Water is consumed in large quantities by industries to manufacture its products.]

2. Why should we not throw- (a) used tea leaves into sink? (b) Cooking oil and fats down the drain? [Hint:

(a) We should not throw used tea leaves into sink because it may block the drain-pipe of the sink and do not allow the free fall of waste water through them.

(b) We should not throw cooking oil and fats down the drain because it can harden and block the drainage pipes. In an open drain, the fats clog the soil pores reducing its effectiveness in filtering water.]

3. Write some simple steps to conserve water.

[Hint: 1. Turn off taps while brushing teeth.

2. Mop the floor instead of washing.

3. Take shorter showers-5 minutes or less.

4. Leaking taps or water pipes should be repaired immediately.]

4. How can you observe the three forms of water (a) in nature and (b) at home?

[Hint: The three forms of water

(a) in nature are snow (solid), water (liquid) and water vapour (gas).

(b) at home are ice (solid), water (liquid) and steam (gas)]

5. Why open drains is a concern?

[Hint: Open drain is a big concern for the society because they create unhygienic conditions.

Flies, mosquitoes and other insects breed over there and can spread a number of diseases.]

6. What is groundwater? What are the sources of water which are fed by groundwater?

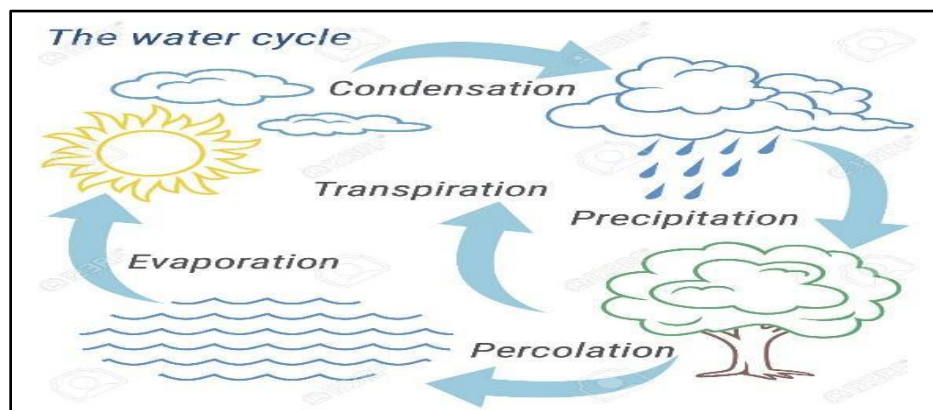
[Hint: Water below the water table where water is found between particles of soil and between rocks is called groundwater. Water table is the upper level of water under the ground which occupies all the spaces in the soil and rocks. The ground water provide water to wells, bawris, tube wells, hand pumps.]

7. What is rain water harvesting? [Hint: The process of collecting rain water from roof tops in a trench below in tanks and can be used for washing, watering plants and to recharge wells.]

8. Explain the importance of bacteria in waste water treatment. [Hint: To break down the organic wastes and to produce bio gas.]

V. LONG ANSWER TYPE QUESTIONS :(5M)

1. Explain some causes of water pollution. [Hint: Some causes of water pollution are-
 - a. Industrial wastes: Industries release their toxic wastes like lead, copper, mercury etc. into water bodies causing severe calamities.
 - b. Domestic wastes: Wastes generated in homes, food, plastics, soaps, human excreta, detergents etc.
 - c. Agricultural wastes: Chemical fertilisers, insecticides etc. pollutes ground water. They get swept away by rains into rivers and lakes. It leads to **eutrophication** that leads to depletion of oxygen in water bodies.]
2. Describe various steps of cleaning wastewater in a wastewater treatment plant.
[Hint: The various steps are: (a) Wastewater is passed through bar screens. Large objects like rags, sticks, cans, plastic packets, napkins are removed. (b) Water then goes to a grit and sand removal tank. The speed of the incoming wastewater is decreased to allow sand, grit and pebbles to settle down. (c) The water is then allowed to settle in a large tank which is sloped towards the middle. Solids like faeces settle at the bottom and are removed with a scraper. The skimmer removes the floatable solids like oil and grease. Water so cleared is called clarified water. (d) Air is pumped into the clarified water to help aerobic bacteria to grow. Bacteria consume human waste, food waste, soaps and other unwanted matter still remaining in clarified water.]
3. Explain the water cycle with a diagram.
[Hint: It is a continuous cycle where water on the earth's surface evaporates due to the heat of the sun. The evaporated water travels and becomes a part of the clouds. It falls down as rain water or snow or hail due to precipitation and then evaporates again. The process repeats again and is called water cycle.]



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