

Chapter 8 WASTE WATER MANAGEMENT
(Blue Print – 1 X 1 = 1 and 3 X 2 = 6 Total Marks : 7)

PART - A

1. An example of water-borne disease is _____.

- i) scabies ii) dracunculiasis iii) trachoma iv) typhoid

Answer: iv) typhoid

2. The sedimented and floating materials are removed by this treatment process.

- i) primary treatment ii) secondary treatment iii) tertiary treatment iv) peripheral treatment

Answer: i) primary treatment

3. Which is a non-renewable resource?

- i) coal ii) petroleum iii) natural gas iv) all the above

Answer: iv) all the above

4. _____ is the chief component of natural gas.

- i) ethane ii) methane iii) propane iv) butane

Answer: ii) methane

PART - B

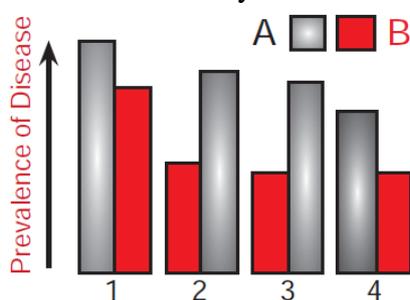
5. The bar-graph indicates the prevalence / widespread attack of infectious diseases in two cities A and B. Observe it and answer the questions given below:

1. Dengue fever 2. Rat fever 3. Cholera 4. Chikungunya

a. What may be the reason for the disease in city A?

b. Which city needs more effective system of waste-disposal and cleaning?

c. How can the disease be controlled in city A?



Answer:

a. **The reason for the disease in city “A”.**

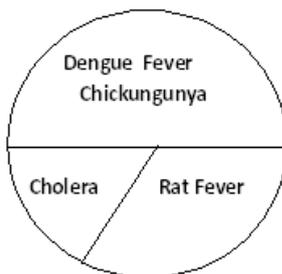
1. Stagnation of contaminated waste water.
2. The ingestion of contaminated water containing pathogenic bacteria and viruses.
3. Uncontrolled breeding of vectors namely mosquito, housefly and rat flea.

b. City **“A”** needs more effective system of waste-disposal and cleaning.

c. **The disease can be controlled in city “A” by**

- i) Proper disposal of waste water through closed drainage systems.
- ii) Proper toilet facility.
- iii) The breeding grounds of the insect vectors should be destroyed.
- iv) Mosquito repellants should be used to prevent diseases like Dengue and Chickungunya.

6. The pie diagram represents a survey result of infectious diseases in a village during 2008 – 2009. Analyse it and answer the following:



i) Which diseases affect the majority of the population?

ii) How are these diseases transmitted?

iii) Mention any three measures that can control the other two diseases.

Answer: i. **Dengue Fever** and **Chickungunya** affect the majority of the population.

ii. The mode of transmission of these diseases.

Disease	Mode of transmission
Dengue	Bite of mosquito
Chickungunya	Bite of mosquito

iii. Measures that can control the other two diseases are

A. Cholera

- i) Proper sanitation.
- ii) Using boiled water.
- iii) Keeping food covered.

B. Rat flea

- i) Proper garbage disposal.
- ii) Keeping the house and surroundings clean.
- iii) Avoid contact with rats or rat-contaminated dwellings.

7. Match the suitable renewable and non-renewable sources.

Sources	A	B	C
Renewable	Coal	Wind	Petroleum
Non- Renewable	Hydrogen	Natural Gas	Solar energy

Answer:

Sources	A	B	C
Renewable	Hydrogen	Wind	Solar Energy
Non-renewable	Coal	Natural Gas	Petroleum

8. Find the odd one out:

- i) Bio-alcohol, Green diesel, Bio-ethers, Petroleum
- ii) Cholera, Typhoid, Scabies, Dysentery

Answer:

i. **Petroleum**

Reason : **Petroleum** is a fossil fuel. Bio alcohol, Green diesel and Bio ethers are **bio fuels**.

ii. **Scabies**

Reason : **Scabies** is water washed disease. Cholera, Typhoid and Dysentery are **water borne diseases**.

9. A non-renewable resource is a natural resource, if it is replaced by natural process at a rate equal to or faster than its rate of consumption by humans.

Read this statement and say whether it is correct or incorrect. If it is incorrect, give the correct statement.

Answer: The statement is **incorrect**.

The corrected statement is.

A **renewable** resource is a natural resource, if it is replaced by natural process at a rate comparable or faster than its rate of consumption by humans.

10. Pick out the appliances that can conserve electric energy.

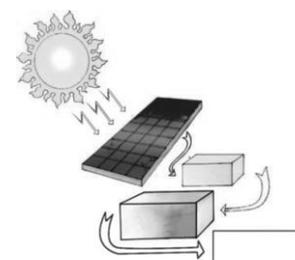
Florescent bulbs, copper choke, solar water heater, electric water heater, tungsten bulbs, electronic choke.

Answer: **Suitable appliances to conserve the electric energy.**

- a) Florescent bulbs
- b) Solar water heater and
- c) Electronic choke.

11. Observe the picture given below and find out what type of energy is produced

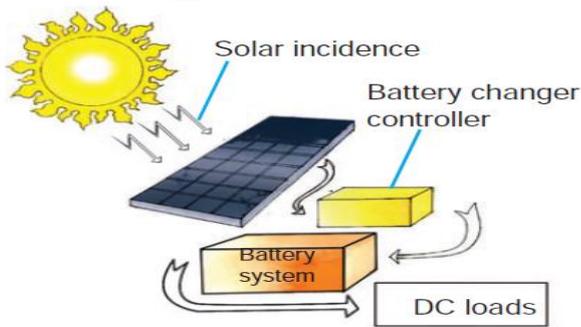
- i) Identify whether this energy is conventional or nonconventional.
- ii) Draw the given diagram and label it with the parts given below: (battery, battery charger controller, solar incidence, DC load, battery system)
- iii) In the given picture, _____energy is transformed into _____energy.



Answer:

i. **Solar energy** is a non-conventional.

ii. **Solar Energy**



iii. In the given picture, Solar energy is transformed into Electrical energy.

12. i) What type of energy is produced in this picture?

ii) What difficulties do we face in harnessing this energy? Explain.

iii) Why do we say that this energy is better than solar energy and atomic energy?

Answer: i. Wind energy is harnessed to produce electrical energy.

ii. Difficulties we face in harnessing wind energy.

1. Wind power is intermittent because winds are unpredictable and uncontrollable.
2. Manufacturing and installation of wind turbines require heavy investments.
3. Wind turbines can kill bats and birds.
4. Moving parts wear out and need more maintenance.

iii. Wind energy is better than solar energy and atomic energy because

1. Cost of fuel is negligible.
2. Wind energy is a green energy source and does not cause pollution.
2. Wind turbines can be built on existing farms or ranches.
3. Wind power is renewable and there is no way we can run out of it.
4. No emission of radiations and other side effects.



13. Fossil fuels are formed by decomposition of bio-mass buried under the earth over millions of years ago.

i) Name any three fossil fuels.

ii) Which fuel is used in the production of fertilizers?

iii) What is natural gas made up of?

Answer: i) Three examples for fossil fuels.

1. Petroleum
2. Coal and
3. Natural Gas

ii) **Fuel used in the production of fertilizers**

Natural gas is a major feedstock for the production of fertilizers.

iii) **Composition of natural gas.**

The composition of natural gas is chiefly methane (> 90%) with traces of ethane and propane.

14. Wind power is generated from uneven heating of the earth's surface by the sun and the hot core.

i) Which country is called the country of winds?

ii) Which country leads the world in harnessing wind energy?

iii) In which district of Tamilnadu do we have wind energy farm?

iv) In which of the following land forms will you be able to harness maximum amount of wind energy?
(plains, canals, valleys)

Answer: i) Denmark is called the country of winds.

ii) **Germany** leads the world in harnessing wind energy.

iii) We have wind energy farm in **Kanyakumari District** of Tamilnadu.

iv) In **plain** only we can harness maximum amount of wind energy.

15. Match the following:

Water borne diseases	Water related diseases	Water based diseases
Typhoid	Dengue	Scabies
Malaria	Amoebiasis	Cholera
Filariasis	Lice	Trachoma

Answer:

Water borne diseases	Water related diseases	Water based diseases
Typhoid	Dengue	Scabies
Cholera	Malaria	Lice
Amoebiasis	Filariasis	Trachoma

16. Water contaminated by human beings, chemical or industrial wastes can cause a variety of communicable diseases through ingestion or physical contact.

i) Name any two diseases caused by polluted water.

ii) Why do we drink boiled water?

iii) How can you reuse waste water in your houses?

Answer: i) **Diseases caused by polluted water.**

1. Hepatitis
2. Typhoid
3. Cholera and
4. Dysentery

ii) **Why do we drink boiled water?**

Pathogens and spores of disease causing microbes can be killed when water is boiled. So drinking boiled water can help to prevent diseases.

iii) **Waste water can be reused in our houses by**

1. Watering yards and gardens
2. Filtering septic systems
3. Irrigating fields

17. Water, a precious physical substance, is essential to all living organisms.

i) Which is the largest water resource?

ii) What are the various sources of water?

iii) Which is the primary source of water?

iv) What are the ways by which you can raise the ground water level in your house?

Answer:

i) **Oceans** are the largest among all the water resources.

ii) **The various sources of water are**

1. Rainfall
2. Oceans
3. Glaciers
4. Ground water
5. Aquifers
6. Artesian well or spring and
7. Rivers, lakes and ponds.

iii) **The primary source of water.**

Rainfall brings the available primary source of water over the earth's surface.

iv) **The ways by which we can raise the ground water level in our house are**

1. Rain water harvesting
2. Filtering septic system
3. Watering yards and gardens and
4. Domestic conservation of water

18. An energy audit is an inspection, survey and analysis of energy flow to ensure energy conservation in a building, process or system.

i) How will you measure consumption of electrical energy at home?

ii) What are the benefits of implementing this method in your school?

Answer:

i) **Methods to measure consumption of electrical energy at home.**

1. An energy audit of a home may involve recording various characteristics of the building envelope including the walls, ceilings, floors, doors, windows and skylights.
2. A home energy audit may include a written report estimating energy consumption at given local climate criteria, thermostat settings, roof overhang, and solar orientation.

ii) **The benefits of implementing the measuring of consumption of electrical energy in our school.**

1. The function of an energy audit is to expose different ways that affect energy consumption and identify numerous options for reducing energy consumption.
2. The money our school saves through energy audit service will be available to fund important school projects

19. We should manage the waste water in order to prevent water pollution and its harmful effects.

- i) What are the ways by which water gets contaminated?
- ii) How will you control water contamination in your house?

Answer:

i) **The ways by which water gets contaminated are**

1. People using the water sources for washing the vessels, clothes . vehicles , taking bath or washing the cattle.
2. By dumping garbage in the water bodies.
3. By allowing sewage water to get mixed in the water bodies.
4. Mixing the waste water from industries containing acidic, basic or heavy metal effluents to rivers or lakes or ocean.
5. Dumping dead bodies or carcasses of animals near water bodies.
6. Fertilizers & pesticides from farm lands getting washed out during heavy rains & floods.
7. Using the river banks as toilets.

ii. **Measures to control water contamination in our house**

1. Do not dispose of household chemicals or cleaning agents down the sink or toilet.
2. Prevent water stagnation around the house.
3. Periodic cleaning of water tanks, sump and septic tanks.
4. Properly dispose the sanitary pads.

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