## 10th Science Lesson 22 Questions in English

## 22] Environmental Management

1. Which among the following is not the non-renewable resources?
   a) Mineral ores
   **b) Wind**
   c) Coal
   d) Petroleum

**Explanation**

Resources can be renewed simultaneously along with their exploitation (forests, crops, wildlife, groundwater, wind and solar energy). They can maintain themselves by natural recycling or can be replenished by proper management. Simultaneously, non-renewable resources cannot be recycled and can get exhausted by unlimited and continuous use (mineral ores, coal, petroleum etc). They cannot be replaced easily.

2. Which among the following statement is correct?
   1) Environmental management deals with the different aspects of environment, its structure, function, its quality and its maintenance including conservation of its living and non-living components. The diversified natural resources on this earth provide the necessities for survival of all forms of life including man.
   2) Everything that comes from nature has some utility for man but its utilization is possible based on the availability of appropriate technology. Expanding human population resulted in expanding needs of man.
   3) With scientific and technological advancement man started utilizing natural resources at a much larger scale. Continuous increase in population caused an increased demand for resources. Therefore, conservation of natural resources makes important contributions to the social and economic development of the country.
      a) Both 1 and 2
      b) Both 1 and 3
      c) Both 2 and 3
      **d) All 1, 2 and 3**

3. Which among the following statement is correct
   1) Natural resources are conserved for their biological, economic and recreational values. The use of natural resources in excess and unplanned way leads to imbalance in the environment. A judicious balance should be maintained between exploitation of resources and its replenishment. It is important that we manage and use our resources carefully so as to preserve for the future generations
   2) Proper utilization and management of nature and its resources is termed as contamination. We have to build a re-sustainable world, which should last forever. Some of the ways to sustain continuous use of resources are practices to utilise energy efficiently, avoid wastage

of water, avoid usage of plastics and other non-biodegradable materials and to take care for the environment we live.

**a) Only 1**
b) Only 2
c) Both 1 and 2
d) None

**Explanation**

Proper utilization and management of nature and its resources is termed as conservation. We have to build a sustainable world, which should last forever. Some of the ways to sustain continuous use of resources are practices to utilise energy efficiently, avoid wastage of water, avoid usage of plastics and other non-biodegradable materials and to take care for the environment we live.

4. Which among the following movement was a non-violent agitation in 1973 that was aimed at protection and conservation of trees?

a) Jungle Bachao movement
b) Navdanya movement
**c) Chipko movement**
d) Averting movement

**Explanation**

The Chipko movement was a non-violent agitation in 1973 that was aimed at protection and conservation of trees. The name of the movement 'Chipko' comes from the word 'embrace', as the villagers hugged the trees and encircled them to prevent them from being cut.

5. Which among the following statement is correct

1) Forests are an important component of our environment and are dominated by microorganisms, flowering plants, shrubs, climbers, dense trees and provide a vast habitat for wild animals. Forests also contribute to the economic development of our country. Forests are vital for human life it is a source for a wide range of renewable natural resource.
2) Forests are major factor of environmental concern. They act as carbon sink, regulate climatic conditions, increase rainfall, reduce global warming, prevent natural hazards like flood and landslides, protect wildlife and also act as catchments for water conservation. They also play a vital role in maintaining the ecological balance.

a) Only 1
b) Only 2
**c) Both 1 and 2**
d) None

6. The Chipko movement originated in which among the following state(Now)?

a) Madhya Pradesh
**b) Uttarakhand**
c) Rajasthan

d) Kerala

**Explanation**

The Chipko movement originated in the Chamoli district of Uttar Pradesh (now Uttarakhand). The protest of Chipko movement achieved a major victory in 1980 with 15 years ban on cutting trees in the Himalayan forests.

7. India is losing how many million hectares of forest cover every year?

**a) 1.5 million**
b) 2.8 million
c) 3.6 million
d) 5.1 million

**Explanation**

Deforestation is the destruction of large area of forests. This happens for many reasons like intensive agriculture, urbanization, construction of dams, roads, buildings and industries, hydroelectric projects, forest fires, construction of mountain and forest roads. It is a threat to the economy, quality of life and future of the environment. India is losing about 1.5 million hectares of forest cover every year.

8. Which among the following is not the problem due to Deforestation?

a) Floods
**b) Typhoon**
c) Drought
d) Soil erosion

**Explanation**

Deforestation gives rise to ecological problems like floods, drought, soil erosion, loss of wild life, extinction of species, imbalance of biogeochemical cycles, alteration of climatic conditions and desertification.

9. How many hectares of forest is classified as reserved forests in India?

**a) 752.3 lakh hectare**
b) 576.5 lakh hectare
c) 256.9 lakh hectare
d) 693.8 lakh hectare

**Explanation**

India has an area of 752.3 lakh hectare classified as reserved forests and 215.1 lakh hectare as protected forests.

10. Which among the following is the afforestation programme?

a) Fasal Bima
b) Pashu Kisan
**c) Van Mahotsav**

d) Paramparagat Krishi

**Explanation**

Activities for afforestation programme (Van Mahotsav) includes planting and protecting trees with multiple uses which help in restoration of green cover. Destruction of trees should be curtailed.

11. Which among the following statement is correct

1) Social forestry programme should be undertaken on a large scale with active participation of the public and utilization of common land to produce firewood, fodder and timber for the benefit of the rural community. This relieves pressure on existing forests and to safeguard future of tribe.
2) Forest Conservation through Laws: Adopting stringent laws and policies to conserve and protect forests are through National Forest Policy, (1972 and 1997) and Forest Conservation Act, 1962.

**a) Only 1**
b) Only 2
c) Both 1 and 2
d) None

**Explanation**

Forest Conservation through Laws: Adopting stringent laws and policies to conserve and protect forests are through National Forest Policy, (1952 and 1988) and Forest Conservation Act, 1980.

12. Which refer to the undomesticated animals living in their natural habitats (forests, grasslands and deserts) an area without human habitation?

a) Den
**b) Wild life**
c) Safari
d) All the above

**Explanation**

Wild life refers to the undomesticated animals living in their natural habitats (forests, grasslands and deserts) an area without human habitation. They are needed for maintaining biological diversity. It also helps in promoting economic activities that generates revenue through tourism. Conservation of forest and wildlife is interrelated with each other.

13. Exploitation of wildlife resources has decreased global wildlife population by what percentage between 1970 and 2014?

a) 45%
**b) 52%**
c) 69%
d) 76%

**Explanation**

Wildlife of India is a great natural heritage. Exploitation of wildlife resources has decreased global wildlife population by 52% between 1970 and 2014. Over exploitation and shrinking of forest cover areas has resulted in animals becoming extinct, some are threatened and some are on the verge of extinction. In recent years, increase in human encroachment has posed a threat to India's wildlife.

14. Which among the following is incorrect regarding aims of wildlife management?
    a) To control and limit exploitation of species and to preserve the plants and animals from extinction
    b) Maintenance of threatened species and protect species which are on the verge of extinction.
    c) To study the ecological relationship of the plants and animals in natural habitat and preserve the endangered species
    **d) Minimising National parks, Wildlife sanctuaries, protected areas and Biosphere reserves.**

**Explanation**

Establishment of National parks, Wildlife sanctuaries, protected areas and Biosphere reserves. Hunting and poaching should be prohibited.

15. When the Wildlife protection Act was established?
    a) 1954
    b) 1962
    **c) 1972**
    d) 1984

**Explanation**

The Wildlife protection Act was established in 1972.

16. Which among the following statement is incorrect regarding wildlife protection act?
    **a) Open trade in wild animals and products obtained from them.**
    b) Constitute sanctuaries, national parks, and closed areas for wildlife conservation.
    c) Special schemes for preservation of endangered species.
    d) Constitute Central Zoo Authority and recognition of zoos.

**Explanation**

Restrict, regulate or prohibit trade in wild animals and products obtained from them. Prohibit killing and hunting of specified animals.

17. Which was the first national park to be established in 1936?
    a) Pench national park
    **b) Jim Corbett national park**
    c) Keibul-Lamjao national park
    d) Vansda national park

**Explanation**

Jim Corbett National Park was the first to be established in 1936.

18. Which among the following is not the Organisations Involved in Conservation of Wildlife?
    a) Indian Board for WildLife (IBWL)
    **b) World Afforesting Corporate (WAC)**
    c) World Wildlife Fund (WWF) for Nature
    d) World Conservation Union (WCN)

19. The Corbett National Park was located in which among the following state?
    a) Assam
    b) Maharashtra
    c) Meghalaya
    **d) Uttarakhand**

**Explanation**

The Corbett National Park was established in 1936 in Uttarakhand, India.

20. Which among the following is not the Organisations Involved in Conservation of Wildlife?
    a) International Union for Conservation of Nature and Natural resources (IUCN)
    b) Convention of International Trade in Endangered Species (CITES)
    c) Bombay Natural History Society (BNHS)
    **d) Madras National Bird Society (MNBS)**

**Explanation**

The Organisations Involved in Conservation of Wildlife are (i) Indian Board for Wildlife (IBWL) (ii) World Wildlife Fund (WWF) for Nature (iii) World Conservation Union (WCN) (iv) International Union for Conservation of Nature and Natural resources (IUCN) (v) Convention of International Trade in Endangered Species (CITES) (vi) Bombay Natural History Society (BNHS) (vii) Wild life Preservation Society of India, Dehradun.

21. Who among the following was the native of Venkatachalapuram village, Theni District in Tamil Nadu was the first Indian woman to strike an International reputation as wildlife photographer?
    a) Dayanita Singh
    b) Anita Venkatesh
    **c) Rathika Ramasamy**
    d) Nalini Malini

**Explanation**

Rathika Ramasamy, a native of Venkatachalapuram village, Theni District in Tamil Nadu was the first Indian woman to strike an International reputation as wildlife photographer. Her passion is towards bird photography. A photobook on wildlife titled "The best of wildlife moments" was published in November 2014.

22. How many biosphere reserves are in India?
    a) 10
    **b) 15**

c) 23
d) 28

**Explanation**

There are 15 biosphere reserves in India. The Nilgiris is a biosphere reserve in Tamil Nadu.

23. Removal of upper layer of soil by wind and water is called _____

a) Soil contamination
b) Soil possession
**c) Soil erosion**
d) All the above

**Explanation**

The top layers of soil contain humus and mineral salts, which are vital for the growth of plants. Removal of upper layer of soil by wind and water is called soil erosion. Soil erosion causes a significant loss of humus, nutrients and decrease the fertility of soil.

24. Indian Rhino Vision 2020 is to conserve at least 3000 greater one-horned rhinos in which state?

**a) Assam**
b) Kerala
c) Bihar
d) Maharashtra

**Explanation**

Indian Rhino Vision 2020 is to conserve at least 3000 greater one-horned rhinos in Assam, India by 2020.

25. Match the following Wildlife Conservation Initiatives with its launch year?

i. Project Tiger – 1. 1999
ii. Project Elephant – 2. 1992
iii. Crocodile Conservation Project – 3. 1976
iv. Sea Turtle Conservation Project – 4. 1973

**a) 4 – 2 – 3 – 1**
b) 3 – 1 – 2 – 4
c) 2 – 1 – 4 – 3
d) 1 – 4 – 2 – 3

**Explanation**

Project Tiger and Project Elephant has been launched in 1973 and 1992 respectively. Crocodile Conservation Project was launched in 1976. Sea Turtle Conservation Project was launched in 1999.

26. Which among the following is the agent of soil erosion?

a) High velocity of wing
b) Farming
c) Landslide

**d) All the above**

**Explanation**

Agents of soil erosion are high velocity of wind, air currents, flowing water, landslide, human activities (deforestation, farming and mining) and overgrazing by cattle.

27. Which among the following statement is incorrect regarding Management of Soil Erosion?

a) Retain vegetation cover, so that soil is not exposed
b) Crop rotation and soil management improve soil organic matter
**c) Wind speed can be controlled by cutting trees in form of a shelter belt**
d) Cattle grazing should be controlled and Runoff water should be stored in the catchment.

**Explanation**

Wind speed can be controlled by planting trees in form of a shelter belt. Reforestation, terracing and contour ploughing.

28. Energy resources can be classified as how many types?

**a) Two**
b) Three
c) Five
d) Six

**Explanation**

Energy is an important input for development. The expansion of possible energy resources has been directly related with the pace of agricultural and industrial development in every part of the world. Energy resources can be classified two types as non-renewable and renewable.

29. Energy obtained from sources that cannot renew themselves over a short period of time is known as _____

a) Renewable energy
**b) Non-renewable energy**
c) Inexhaustible energy
d) Both Renewable and Inexhaustible

**Explanation**

Energy obtained from sources that cannot renew themselves over a short period of time is known as non-renewable (Exhaustible) energy. These are available in limited amount in nature.

30. Which among the following is the other term of Renewable energy resources?

a) Exhaustible energy resources
b) Conventional energy resources
**c) Inexhaustible energy resources**
d) Both Conventional and Inexhaustible

**Explanation**

Renewable (Inexhaustible) energy resources are available in unlimited amount in nature and they can be renewed over a short period of time, inexpensive and can be harvested continuously.

31. The conventional energy resources account for how many percentages of the world's production of commercial energy?

a) 75%
b) 80%
c) 85%
**d) 90%**

**Explanation**

The conventional energy resources (Non-renewable energy resources) account for 90% of the world's production of commercial energy and nuclear power account for 10%.

32. Which among the following is not the Non-renewable energy resource?

a) Coal
**b) Biofuel**
c) Natural gas
d) Petroleum

**Explanation**

Non-renewable energy resources include coal, petroleum, natural gas and nuclear power. The Renewable (non-conventional) energy resources which include biofuel, biomass energy, geothermal energy, water energy (hydroelectric energy and tidal energy), solar energy, wave energy and wind energy.

33. Which among the following is not the fossil fuel?

**a) Uranium**
b) Petroleum
c) Coal
d) None of the above

**Explanation**

Fossil fuels are found inside the earth's crust and are energy rich substances formed by natural process, such as anaerobic decomposition of buried dead organisms, over millions of years. As the accumulating sediment layers produce heat and pressure, the remains of the organisms are gradually transformed into hydrocarbons. e.g. petroleum, coal and natural gas.

34. Which among the following statement is correct

1) Coal and Petroleum are natural resources. They are called fossil fuels as they are formed from the degradation of biomass buried deep under the earth millions of years ago. Coal is used for generation of electricity at Thermal power plants.
2) Petroleum also known as green oil is processed in oil refineries to produce petrol and diesel which are used to run automobiles, trucks, trains, ships and airplanes etc. Macerated oil and

LPG (Liquefied Petroleum Gas) obtained from petroleum is used as domestic fuel for cooking food

3) The coal and petroleum reserves can get exhausted if we continue using them at a rapid rate. The formation of these fossil fuels is a very slow process and takes very long period of time for renewal.
    a) Both 1 and 2
    **b) Both 1 and 3**
    c) Both 2 and 3
    d) All 1, 2 and 3

**Explanation**

Petroleum also known as crude oil is processed in oil refineries to produce petrol and diesel which are used to run automobiles, trucks, trains, ships and airplanes etc. Kerosene and LPG (Liquefied Petroleum Gas) obtained from petroleum is used as domestic fuel for cooking food.

35. Which among the following statement regarding Steps to Conserve Coal and Petroleum Resources is incorrect?

**a) If electricity is saved, it will in turn increase the use of coal**
b) Using bicycle for covering short distances instead of using cars, scooters or motorcycles
c) Using pressure cooker can reduce the consumption of kerosene and LPG while cooking food. Solar cooker and solar heaters can be used wherever possible
d) Motor vehicles should be designed with fuel efficient engines to increase efficiency and also reduce air pollution.

**Explanation**

It is necessary to conserve or save coal and petroleum resources for the future use, which can be done by reducing their consumption. If electricity is saved, it will in turn reduce the use of coal.

36. What is the position of India in the world as the consumer of crude oil?

a) First
b) Second
**c) Third**
d) Fourth

**Explanation**

India is the third largest consumer of crude oil in the world, after the United States and China.

37. In which among the following state Taj Mahal is present whose white marble became yellow due to air pollution?

a) Punjab
**b) Uttar Pradesh**
c) Bihar
d) Madhya Pradesh

**Explanation**

The Taj Mahal is one of the seven wonders of the world and is located in Agra, Uttar Pradesh. It is built with white marble. The white marble became yellow due to air pollution. The Government of India has set up emission standards around the monument to protect it from the damage.

38. Which oil refinery owned by Indian Oil Corporation present around Taj Mahal, Agra area produce sulphur and nitrogen oxides cause air pollution?

a) Jamnagar oil refinery
b) Bina oil refinery
**c) Mathura oil refinery**
d) Barmer oil refinery

**Explanation**

The Mathura oil refinery owned by Indian Oil Corporation present around Taj Mahal, Agra area produce sulphur and nitrogen oxides turns Taj Mahal white marble to Yellow.

39. Which among the following statement is incorrect.

1) The energy crisis has shown that for sustainable development in energy sector we must conserve the renewable conventional resources from its rapid depletion and replace them by non-polluting, Non-renewable sources which are environmentally clean.
2) Efforts are made to develop new sources of energy which is called non-conventional sources of energy. It would provide greater initiative to local people who could assess their needs and resources and plan a strategy that could be useful to them.

**a) Only 1**
b) Only 2
c) Both 1 and 2
d) None

**Explanation**

The energy crisis has shown that for sustainable development in energy sector we must conserve the non-renewable conventional resources from its rapid depletion and replace them by non-polluting, renewable sources which are environmentally clean.

40. Which among the following is the energy obtained from the sun?

a) Polar energy
b) Tidal energy
**c) Solar energy**
d) All the above

**Explanation**

Solar energy is the energy obtained from the sun.

41. Which among the following statement is correct.

1) The sun gives out vast amount of light and heat. It is only a little less than half (47%) of solar energy which falls on the atmosphere reaches the earth's surface. If we could use just a small part of this energy it would fulfil all the country's need for power.
2) Solar energy has advantages and certain limitations. The energy from the sun can be harnessed to provide power. The various devices used for harnessing sun's energy are called solar energy devices.
    a) Only 1
    b) Only 2
    **c) Both 1 and 2**
    d) None

42. Solar cells (Photovoltaic devices) is made up of which element that converts sunlight directly into electricity?

a) Phosphor
**b) Silicon**
c) Boron
d) Carbon

**Explanation**

Solar cells (Photovoltaic devices) are made up of silicon that converts sunlight directly into electricity. Solar cell produces electricity without polluting the environment. Since it uses no fuel other than sunlight, no harmful gases, no burning, and no wastes are produced.

43. Which among the following is incorrect regarding solar cells?

a) Solar cells can be used for street lighting, traffic signals, water pumping, battery charging system etc.
b) It is used in artificial satellites and space probes. t is used in calculators, electronic toys and watches.
c) It provides radio and TV transmission to remote areas.
**d) These cannot be installed in remote and inaccessible areas where setting up of power plant is expensive.**

**Explanation**

These can be installed in remote and inaccessible areas (forests and hilly regions) where setting up of power plant is expensive.

44. Which among the following statement is correct.

1) Arrangement of many solar cells side by side connected to each other is called solar panel. The capacity to provide electric current is much decreased in the solar panel. The process of manufacture this is very cheap.
2) Solar cooker consist of an insulated metal box or wooden box which is painted from outside to absorb maximum solar radiations. A thin silicon sheet forms the cover over the box. The

reflector is the plane mirror which is attached to the box. The food is cooked by energy radiated by the sun.

3) In solar thermal power plants, many solar panels are used to concentrate sun rays, to heat up water into steam. The steam is used to run the turbines to produce electricity. A capacity of 100 litres solar heater can save up-to 1500 units of electricity per year.
    a) Only 2
    **b) Only 3**
    c) Both 1 and 3
    d) Both 2 and 3

**Explanation**

Arrangement of many solar cells side by side connected to each other is called solar panel. The capacity to provide electric current is much increased in the solar panel. But the process of manufacture is very expensive.

Solar cookers consist of an insulated metal box or wooden box which is painted from inside so as to absorb maximum solar radiations. A thick glass sheet forms the cover over the box. The reflector is the plane mirror which is attached to the box. The food is cooked by energy radiated by the sun.

45. Which among the following statement is incorrect regarding solar energy.
    a) Solar energy is available in abundance in our country and is free of cost.
    **b) Solar energy is a non-renewable source of energy.**
    c) Solar energy can be used for generating electricity or heat.
    d) Solar energy does not cause pollution.

**Explanation**

Solar energy is a renewable source of energy.

46. Which among the following is not the part of mixture of Biogas?
    a) Methane
    **b) Nitrogen**
    c) Hydrogen sulphide
    d) Carbon dioxide

**Explanation**

Biogas is the mixture of methane (nearly 75 %), hydrogen sulphide, carbon dioxide and hydrogen. It is produced by the decomposition of animal wastes (cow dung) and plant wastes in the absence of oxygen.

47. Which among the following is the other name of Biogas?
    **a) Gobar gas**
    b) Shale gas
    c) Gross gas
    d) Meteor gas

**Explanation**

Biogas is also commonly called as 'Gobar gas' since the starting material used is cow dung which means gobar in Hindi.

48. Which among the following statement incorrect regarding Biogas

a) Biogas is used as fuel for cooking and is used to run motors and pump sets.
**b) Biogas is used to generate electricity and burns with smoke and therefore causes pollution.**
c) An excellent way to get rid of organic wastes like bio-waste and sewage material and It is safe and convenient to use.
d) Left over slurry is a good manure rich in nitrogen and phosphorus and can reduce the amount of greenhouse gases emitted.

**Explanation**

Biogas is used to generate electricity and burns without smoke and therefore causes less pollution.

49. Which gas is obtained from the compaction of small old rocks containing mud and minerals – such as quartz and calcite, trapped beneath earth's surface?

a) Meteor gas
b) Gross gas
**c) Shale gas**
d) All the above

**Explanation**

Shale (Shale gas) refers to the soft finely stratified sedimentary rock that is formed from the compaction of small old rocks containing mud and minerals – such as quartz and calcite, trapped beneath earth's surface. These rocks contain fossil fuels like oil and gas in their pores.

50. Shale gas is extracted by a technique called ____

a) Dynamic cracking
**b) Hydraulic fracturing**
c) Crust fracturing
d) Plate cracking

**Explanation**

Shale gas is extracted by a technique called hydraulic fracturing (drilling or well boring of sedimentary rocks layers to reach productive reservoir layers).

51. Which among the following statement is correct regarding shale gas?

1) Shale drilling could affect groundwater reserves, which can contaminate the drinking water resources and affect the fertility of the soil.
2) Thousand gallons of petroleum is needed to break and release the shale gas, which in turn can affect the ground table.

**a) Only 1**
b) Only 2
c) Both 1 and 2

d) None

**Explanation**

Million gallons of water is needed to break and release the shale gas, which inturn can affect the water table.

52. Which among the following is not the identified basins as areas for shale gas exploration?

a) Cauvery onshore
b) Krishna Godavari onshore
**c) Narmada onshore**
d) Gondwana

**Explanation**

India has identified six basins as areas for shale gas exploration: Cambay (Gujarat), Assam-Arakan (North East), Gondwana (Central India), Krishna Godavari onshore (East Coast), Cauvery onshore and Indo-Gangetic basins.

53. Which among the following statement is incorrect regarding wind energy?

1) The potential energy possessed by the wind is due to its high speed, that can be converted into chemical power by wind turbines. The rotatory motion of windmill produces wind energy. It can be used for generating electricity, run water pumps, flour mills, draw water from wells etc.
2) Windmill is a machine that converts the energy of wind into rotational energy by broad blade attached to the rotating axis. When the blowing air strikes the blades of the windmill, it exerts force and causes the blades to rotate. The rotational movement of the blades operate the generator, and the electricity is produced.

**a) Only 1**
b) Only 2
c) Both 1 and 2
d) None

**Explanation**

The kinetic energy possessed by the wind is due to its high speed, that can be converted into mechanical power by wind turbines. The rotatory motion of windmill produces wind energy. It can be used for generating electricity, run water pumps, flour mills, draw water from wells etc.,

54. Where world's largest and tallest wind turbine is situated?

a) France
b) Madrid
**c) Hawaii**
d) Wellington

**Explanation**

The world's largest and tallest wind turbine is situated in Hawaii. One wind turbine can produce electricity for 300 homes.

55. Which among the following is incorrect regarding wind energy?

a) Wind energy is free, eco-friendly, renewable source of energy.
b) Wind energy does not cause pollution.
**c) Expenses on periodic maintenance is high when compared to the other power sources.**
d) None of the above

**Explanation**

Expenses on periodic maintenance is low when compared to the other power sources.

56. Earth's surface is covered with nearly how many percentages of water?

a) 89%
b) 53%
c) 68%
**d) 71%**

**Explanation**

Earth's surface is covered with nearly 71% of water.

57. Which among the following statement is correct regarding water energy?

1) Harnessing the energy from the flowing water can be used to produce electricity. The technique to harness the water energy is called Hydropower. The electrical energy is derived from water flow, water falling from a height.
2) Hilly areas are suitable for this purpose where there is continuous flow of water in large amounts falling from high slopes. It does not cause environmental pollution or waste generation. Hydropower plants converts the kinetic energy of flowing water into electricity. This is called hydroelectricity.
    a) Only 1
    b) Only 2
    **c) Both 1 and 2**
    d) None

58. Which is a technique of collecting and storing rainwater for future use?

**a) Rainwater harvesting**
b) Rainwater recementing
c) Rainwater plotting
d) Rainwater patterning

**Explanation**

Rainwater harvesting is a technique of collecting and storing rainwater for future use. It is a traditional method of storing rainwater in underground tanks, ponds, lakes, check dams and used in future. The main purpose of rainwater harvesting is to make the rainwater percolate under the ground so as to recharge 'groundwater level'.

59. Which among the following is not the method of rainwater harvesting?
    a) Roof top rainwater harvesting
    b) Ooranis
    c) Recharge pit
    **d) Incineration**

**Explanation**

Methods of rainwater harvesting are i) Roof top rainwater harvesting, ii) Recharge pit, iii) Digging of tanks or lakes (Eris) and iv) Ooranis.

60. Which among the following statement is incorrect regarding tidal energy?
    1) Tidal energy is the energy obtained from the movement of water due to ocean tides. Tides are the rise and fall of sea levels caused by the combined effects of the gravitational forces exerted on the oceans of the earth.
    2) A tidal stream is a fast-flowing body of water created by tides. Turbines are placed in tidal streams. When the tides hit the turbine, the turbine rotates and converts the tidal energy into electric energy.
        a) Only 1
        b) Only 2
        c) Both 1 and 2
        **d) None**

61. Which among the following point is incorrect regarding tidal energy?
    a) Tidal energy does not produce any pollution.
    b) It does not use any fuel and does not produce any waste.
    **c) Tides are not predictable, so tidal energy can be produced at any time.**
    d) Water is denser than air and therefore can generate electricity at lower speeds than wind turbines.

**Explanation**

Tides are predictable, so tidal energy can be produced at any time.

62. Which among the following statement regarding Methods of rainwater harvesting is correct.
    1) Roof top rainwater harvesting: Rooftops are excellent rain catchers. The rainwater that falls on the roof of the houses, apartments, commercial buildings etc. is collected and stored in the surface tank and can be used for domestic purpose.
    2) Digging of tanks or lakes (Eris): It is one of the traditional waters harvesting system in Tamil Nadu. Eris are constructed in such a way that if the water in one eri overflows, it automatically gets diverted to the eri of the next village, as these eris are interconnected.
    3) Ooranis: In this method, the rainwater is first collected from the roof tops or open spaces and is directed into the percolation pits through pipes for filtration. After filtration the rainwater enters the recharge pits or ground wells.
        **a) Both 1 and 2**

b) Both 1 and 3
c) Both 2 and 3
d) All 1, 2 and 3

**Explanation**

Recharge pit: In this method, the rainwater is first collected from the roof tops or open spaces and is directed into the percolation pits through pipes for filtration. After filtration the rainwater enters the recharge pits or ground wells.

Ooranis: These are small ponds to collect rainwater. The water is used for various domestic purposes (drinking, washing, and bathing). These ponds cater the nearby villages.

63. Who among the following build the kallanai Dam, also known as Grand Anicut?

a) King Raja Raja Chola
b) King Rajendra Chola
**c) King Karikala Chola**
d) King Adhithya Chola

**Explanation**

kallanai Dam, also known as Grand Anicut, is the fourth oldest dam in the world, constructed by King Karikala Chola of the Chola Dynasty in the 2nd century A.D.(CE). It still serves the people of Tamilnadu, the dam is located on the River Kaveri, approximately 20 km from the city of Tiruchirapalli.

64. Which among the following point is incorrect regarding rainwater harvesting?

a) Overcome the rapid depletion of ground water levels.
b) To Meet the increase demand of water.
c) Reduces flood and soil erosion.
**d) Water stored in ground is contaminated by human and animal wastes so examined before drinking purpose.**

**Explanation**

Water stored in ground is not contaminated by human and animal wastes and hence can be used for drinking purpose.

65. Which among the following produce Electricity or electric power?

a) Motor
**b) Generator**
c) Compressor
d) All the above

**Explanation**

Electricity or electric power is produced by generators. The generators are operated by the turbines attached to it. The turbines are rotated by steam, moving water or wind power to produce electricity.

66. Which among the following point is incorrect regarding Conservation of electrical energy?

a) Use energy efficient appliances to save electricity like Compact Fluorescent Lamps (CFL), Light Emiting Diode (LED) bulbs and other electric equipments.
b) Switch off the lights and fans, television and other electrical appliances when not in use.
**c) Minimise the use of solar radiation. Electric geyser can be used instead of Solar water heating system.**
d) Switch of the mobile phone chargers when not in use and Minimise the use of air conditioners.

**Explanation**

Maximise the use of solar radiation. Solar water heating system can be used instead of electric geysers.

67. E-wastes are generally called as _____

a) Engineering wastes
**b) Electronic wastes**
c) Elite wastes
d) Economical wastes

**Explanation**

E-wastes are generally called as electronic wastes, which includes the spoiled, outdated, non-repairable electrical and electronic devices. These wastes contain toxic metals like lead, cadmium, chromium, and mercury, though also contain iron, copper, silicon, aluminum and gold which can be recovered.

68. How many percentages of e-wastes produced are recycled?

**a) 5%**
b) 10%
c) 15%
d) 25%

**Explanation**

Only 5 % of e-wastes produced are recycled.

69. Which among the following is not the Sources of e-wastes?

a) Electronic devices
b) Household electrical appliances
c) Accessories
**d) None of the above**

**Explanation**

Electronic devices: Computers, laptops, mobile phones, printers, monitors, televisions, DVD players, calculators, toys, sport equipment's, etc.
Household electrical appliances: Refrigerators, washing machine, microwave oven, mixer, grinder, water heater, etc.,
Accessories: Printing cartridges, batteries, and chargers.

70. E-waste includes how many percentages of computer components?

a) 45%
b) 58%
**c) 66%**
d) 72%

**Explanation**

E-wastes include 1. Computer components - 66%, 2. Telecommunication components - 12 %, 3. Electronic components - 5 %, 4. Biomedical components - 7 % and Other components - 6 %. Disposal of any kind of electrical and electronic devices without knowledge can become the landfill and water pollutants.

71. Which among the following Damages central and peripheral nervous system; affect brain development in children?

**a) Lead**
b) Chromium
c) Cadmium
d) Mercury

**Explanation**

Lead: Damages central and peripheral nervous system; affect brain development in children.

72. Which among the following accumulates in kidney and liver; neural damage?

a) Chromium
**b) Cadmium**
c) Mercury
d) Polyvinyl Chloride

**Explanation**

Cadmium: Accumulates in kidney and liver; neural damage.

73. Which among the following is correctly matched with Health Effects of E- Wastes?

1) Mercury - Asthmatic bronchitis
2) Chromium - Chronic damage to brain and respiratory system
3) Polyvinyl Chloride - Burning produces dioxin which can cause developmental and reproductive problems, damages the immune system.

a) Only 1
b) Only 2
**c) Only 3**
d) Both 1 and 3

**Explanation**

Chromium - Asthmatic bronchitis, Mercury - Chronic damage to brain and respiratory system.

74. Which among the following is the sources of Sewage/wastewater?

a) Leather industries
b) Paper and pulp industries
c) Household activities
**d) All the above**

**Explanation**

Untreated sewage or wastewater generated from domestic and industrial process is the leading polluter of water sources in India. Sewage water results in agricultural contamination and environmental degradation. Sources of sewage are • Domestic purpose or household activities • Dye and textile industries • Leather industries • Sugar and breweries industries • Paper and pulp industries.

75. Which among the following is not conventional wastewater treatment methods?

a) Pre-screening
b) Aeration
c) Water Reuse
**d) Incineration**

**Explanation**

The conventional wastewater treatment methods involve the following steps (a) Pre-screening (b) Aeration (c) Sludge Management and (d) Water Reuse.

76. Which among the following statement is correct regarding Sewage/wastewater treatment method?

1) Pre-screening: Wastewater generated from domestic and industrial activities is screened to remove soil and solid particulates.
2) Aeration: Screened wastewater is then pumped to an aeration tank. Here the microbial contaminants are removed by the biological degradation that occurs in the presence of air.
3) Water recycling: The water will then be supplied for domestic or industrial purposes.

a) Both 1 and 2
b) Both 1 and 3
c) Both 2 and 3
**d) All 1, 2 and 3**

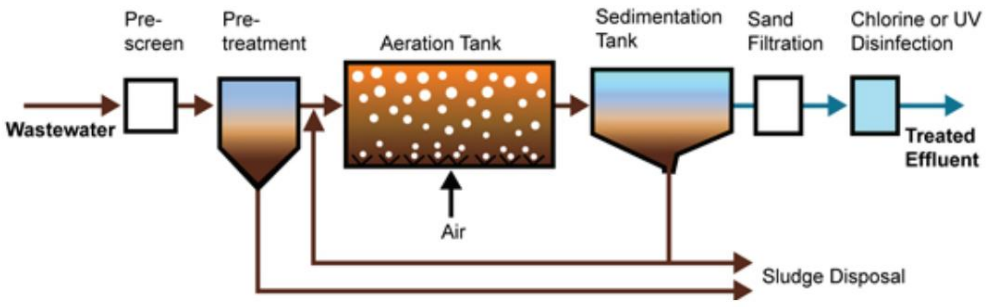


Figure 22.5 Conventional Wastewater Treatment

77. In Sedimentation process method (Sewage treatment method) the solid particles in suspension form are allowed to settle. The particles that settle out from the suspension is known as _____

a) Posh
**b) Sludge**
c) Raven
d) All the above

**Explanation**

In Sedimentation process the solid particles in suspension form are allowed to settle. The particles that settle out from the suspension is known as sludge. The sludge generated by the degradation process is transferred periodically from the tank for safe disposal.

78. Which among the following is not used to remove any microorganism contamination in Sewage/wastewater treatment method?

a) Chlorination
b) Ultraviolet radiation
**c) Infrared**
d) None of the above

**Explanation**

Chlorination and ultraviolet (UV) radiation of treated water is required to remove any microorganism contamination.

79. Which among the following is not the solid waste?

a) Hospital wastes
b) Industrial wastes
c) E- wastes
**d) None of the above**

**Explanation**

Solid wastes mainly include municipal wastes, hospital wastes, industrial wastes and e- wastes etc. The solid wastes are dumped in the soil which results in landscape pollution. Solid-waste management involves the collection, treatment and proper disposing of solid material that is discarded from the household and industrial activities.

80. Which among the following methods of solid wastes disposal is incorrect?

**a) Aeration**
b) Segregation
c) Sanitary landfill
d) Incineration

**Explanation**

Methods of solid wastes disposal are 1. Segregation, 2. Compositing, 3. Incineration and 4. Sanitary landfill.

81. Which among the following statement is correct regarding methods of solid wastes disposal?

1) Segregation: It is the separation of different type of waste materials like biodegradable and non-biodegradable wastes
2) Composting: Solid wastes are dumped into low lying areas. The layers are compacted by trucks to allow settlement. The waste materials get stabilised in about 2-12 months. The organic matter undergoes decomposition.
3) Incineration: It is the burning of non-biodegradable solid wastes (medical wastes) in properly constructed furnace at high temperature.

a) Both 1 and 2
**b) Both 1 and 3**
c) Both 2 and 3
d) All 1, 2 and 3

**Explanation**

Sanitary landfill: Solid wastes are dumped into low lying areas. The layers are compacted by trucks to allow settlement. The waste materials get stabilised in about 2-12 months. The organic matter undergoes decomposition.

82. In Compositing method, Biodegradable matter of solid wastes is digested by microbial action or earthworms and converted into _____

a) Pores
b) Cymath
**c) Humus**
d) Spike

**Explanation**

In Composting method Biodegradable matter of solid wastes is digested by microbial action or earthworms and converted into humus.

83. Which among the following statement is incorrect.

1) Papers from old books, magazines and newspapers are recycled to produce papers in papermills.
2) Agricultural wastes like coconut shells, jute cotton stalk, bagasse of sugarcane can be used to make paper and hard board. Paddy husk can be used as livestock fodder.
3) Cow dung and other organic wastes can be used in shale gas plant to provide natural gas and manure for fields.

**a) Both 1 and 2**
b) Both 1 and 3
c) Both 2 and 3
d) All 1, 2 and 3

**Explanation**

Cow dung and other organic wastes can be used in gobar gas plant to provide biogas and manure for fields.

84. Which among the following is not the 4R approach?

a) Recovery
**b) Remove**
c) Recycle
d) Reduce

**Explanation**

The 4R approach such as Reduce, Reuse, Recovery and Recycle may be followed for effective waste management.