

**Question:1**

**Fill in the blanks with the correct words.**

1. Straw-coloured fluid that consists of suspended cells is called .....  
(plasma/haemoglobin).
2. Female organ of a flower that contains the ovary with the ovules is called a .....  
(stamen/pistil).
3. .... (Light year/Hour) is a unit of time.
4. Centre of a cyclone is called ..... (the eye of the storm/water spout).
5. A convex lens form a ..... (variety of image/virtual image).

**Solution:**

1. Straw-coloured fluid that consists of suspended cells is called plasma.
2. Female organ of a flower that contains the ovary with the ovules is called a pistil.
3. Hour is a unit of time.
4. Centre of a cyclone is called the eye of the storm.
5. A convex lens forms a virtual image.

**Question:2**

**Write T for true statement and F for the false one. Correct the false statement(s).**

1. Convex and concave mirrors are plane reflecting surfaces.
2. The source of image in rivers is underground water.
3. Animals are called producers as they can produce their own food.
4. Solid wastes that settle at the bottom in the primary treatment of wastewater are called scum.
5. The atomic clock is the most accurate clock.

**Solution:**

1. F. Convex and concave are curved reflecting surfaces.
2. T. The source of water in rivers is underground water and rainfall.
- 3.F. Animals are called consumers as they cannot produce their own food.
- 4.F. Solid wastes that settle at the bottom in the primary treatment of wastewater is called sludge.
5. T. The atomic clock is the most accurate clock.

**Question:3**

Find in the blanks with the correct words.

1. At ..... ( $0^{\circ}\text{C}/100^{\circ}\text{C}$ ) water turns into steam.
2. The discharge of liquid from an industry is called (effluent/sewage).
3. Electric ..... (circuit/fuse) is a safety device which prevents excessive current from flowing in a circuit.
4. Wind, water and insect are the ..... (friends/agents) of pollution.
5. The layer where trees branch off from the tree trunk is called ..... (crown/canopy).

**Solution:**

1. At  $100^{\circ}\text{C}$  water turns into steam.
2. The discharge of liquid from an industry is called effluent.
3. Electric fuse is a safety device which prevents excessive current from flowing in a circuit.
4. Wind, water and insect are the agents of pollution.
5. The layer where trees branch off from the tree trunk is called crown.

**Question:4**

An anemometer is usually used to measure

- (a) speed of wind
- (b) direction of wind
- (c) humidity in the air
- (d) none of these

**Solution:**

- (a) and (b)

An anemometer is usually used to measure the speed of the wind and sometimes the wind direction.

**Question:5**

Large-scale felling of trees is called

- (a) afforestation
- (b) deforestation
- (c) conservation

(d) either a or b

**Solution:**

(b) Deforestation

Large scale felling of trees is called deforestation.

**Question:6**

Water freezes to ice at

(a)  $100^{\circ}\text{C}$

(b)  $25^{\circ}\text{C}$

(c)  $0^{\circ}\text{C}$

(d)  $10^{\circ}\text{C}$

**Solution:**

(c)  $0^{\circ}\text{C}$

Water freezes to ice at  $0^{\circ}\text{C}$ .

**Question:7**

The purest form of water is

(a) lake water

(b) river water

(c) sea water

(d) rain water

**Solution:**

(d) Rain water

Rain water is the purest form of water.

**Question:8**

A smooth polished surface that can return the rays of light and form a clear image is called a

(a) lens

(b) glass

(c) mirror

(d) all of these

**Solution:**

(c) mirror

A smooth polished surface that can reflect the light and form a clear image is called a mirror.

**Question:9**

Cup anemometers are mainly used by ..... stations.

- (a) gas
- (b) railway
- (c) meteorological
- (d) metro

**Solution:**

- (c) Meteorological

Cup anemometers are mainly used by meteorological stations.

**Question:10**

..... is responsible for continuous circulation of water on Earth.

- (a) Water table
- (b) Ground water
- (c) Water cycle
- (d) None of these

**Solution:**

- (c) Water cycle

Water cycle is responsible for continuous circulation of water on Earth.

**Question:11**

Sea and ocean water are not fit for domestic use because they are

- (a) sweet
- (b) sour
- (c) insipid
- (d) salty

**Solution:**

- (d) Salty

Sea and ocean water are not fit for domestic use because they are salty.

**Question:12**

India's three major rivers are

- (a) Ganga, Godavari, Yamuna
- (b) Indus, Yamuna, Ganga
- (c) Indus, Ganga, Brahmaputra
- (d) Yamuna, Ganga, Saraswati

**Solution:**

- (c) Indus, Ganga and Brahmaputra

The three major rivers of India are Indus, Ganga and Brahmaputra.

**Question:13**

Underground water is also called

- (a) rainwater
- (b) pure water
- (c) saltwater
- (d) aquifer

**Solution:**

- (d) Aquifer

Underground water is also called aquifer.

**Question:14**

Severe storms are called ..... in Eastern Asia.

- (a) cyclones
- (b) typhoons
- (c) hurricanes
- (d) aquifer

**Solution:**

- (b) Typhoons

Severe storms are called typhoons in Eastern Asia.

**Question:15**

Tornadoes formed over sea are called .....

- (a) cyclones
- (b) debris
- (c) water spouts
- (d) winds

**Solution:**

- (c) Water spouts

Tornadoes formed over sea are called water spouts.

**Question:16**

In which process are chemicals used to remove phosphorous and nitrogen from water?

- (a) Tertiary process
- (b) Secondary process
- (c) Primary process
- (d) Either b or c

**Solution:**

- (a) Tertiary process

Tertiary process is a chemical process in which chemicals are used to remove phosphorus and nitrogen from water.

**Question:17**

Aeration tanks are found in the

- (a) tertiary process
- (b) secondary process
- (c) primary process
- (d) all of these

**Solution:**

- (b) Secondary process

Aeration tanks are found in the secondary process of a wastewater treatment plan.

**Question:18**

Food chains are simple representations of ..... in nature.

- (a) energy flow
- (b) rain
- (c) snow
- (d) pyramids

**Solution:**

- (a) energy flow

Food chains are simple representations of energy flow in nature.

**Question:19**

**Write one word for the following.**

1. A coloured disc appears white because of this property of our eyes.
2. It is a curved and polished place of glass.
3. The bouncing of light from a surface is called this.
4. It is a small bulb-like outgrowth in yeast.
5. This time period is equal to 10 centuries.

**Solution:**

1. Persistence of vision
2. Lens
3. Reflection
4. Bud
5. A millennium (1000 years)

**Question:20**

**Write T for the true statement and F for the false one. Correct the false statement(s).**

1. In sexual reproduction a new plant body is formed a single parent.
2. Century is a very large unit of time.
3. Pendulum is an instrument used to measure time.
4. The distance travelled by a body in unit time is called speed.
5. A very strong wind is called a breeze.

**Solution:**

1. F. In sexual reproduction, a new plant body is formed from two sexes.
2. T. Century is a very large unit of time.
3. T. Pendulum is an instrument used to measure time.

4. T. The distance travelled by a body in unit time is called speed.

5. F. A very strong wind is called a gale.

### Question:21

**Write T for the true statement and F for the false one. Correct the false statement(s).**

1. An electromagnet consists of a piece of soft iron with a thread wound around it.

2. An instrument used to measure wind speed is called wind vane.

3. An image that cannot be formed on a screen is called an inverted image.

4. Well is a huge store of water.

5. Mango and coconut trees act as wind breakers.

### Solution:

1. F. An electromagnet consists of a piece of soft iron with a coil of wire wrapped around it.

2. F. An instrument used to measure wind speed is called anemometer.

3. F. An image that cannot be formed on a screen is called a virtual image.

4. F. Oceans are a huge store of water.

5. F. Palm and coconut trees acts as wind breakers.

### Question:22

**Circle the odd one.**

1. Neem              Amla              Bamboo              (*Hint: It is not used to make medicine.*)

2. Green chilly      Ginger              Turmeric              (*Hint: It is not an outgrowth to produce a new plant.*)

3. Grapes              Rose              Jasmine              (*Hint: It can grow by its stem, too.*)

4. Sundial              Hour glass              Wall clock              (*Hint: Device most commonly.*)

5. Bulb              Cell              Tube light              (*Hint: It doesn't need electricity.*)

### Solution:

1. Bamboo

2. Green chilly

3. Rose

4. Wall clock

5. Cell

### Question:23



Write the types and names of pollination.

**Solution:**

There are two types of pollination. They are:

1. Self pollination
2. Cross pollination

**Question:24**

What is a speedometer? Write its uses.

**Solution:**

A speedometer is an instrument used to indicate the speed of a vehicle.

Uses:

1. A speedometer fitted in a vehicle can measure the speed at which the vehicle is moving
2. It is also used to calculate the distance travelled by the vehicle, knowing the time for which the vehicle has been running.

**Question:25**

Define the electric circuit and electric fuse.

**Solution:**

Electric circuit: An electrical device which allows the flow of electric current through it.

Electric fuse: A safety device which is used to limit the flow of current in an electrical circuit.

**Question:26**

What is air pressure? Name two factors on which it depends.

**Solution:**

Air pressure:

The force exerted by the weight of the air molecules above the earth's surface on the surface of the earth, per unit area of the earth's surface, is called air pressure.

The two factors on which air pressure depends are:

1. Altitude
2. Temperature of air.

**Question:27**

Is tornado different from the storm? If yes, how?

**Solution:**

Yes. A storm is a disturbance in the atmosphere producing strong winds, rain, thunder, lightning and sometimes snow. A tornado is a ferocious and dangerous descendent of storm. Its a short lived violently rotating windstorm that descends from the thunderstorms in the cloud to the ground.

**Question:28**

Give the differences between diffused reflection and regular reflection.

**Solution:**

Regular Reflection	Diffused Reflection
Reflection of light from a regular surface is called regular reflection.	Reflection of light from a rough or irregular surface is called diffused reflection.
Light is reflected only in one direction.	Light is reflected in different directions.
Example: Reflection from a mirror	Example: Reflection from a white paper.

**Question:29**

Write two uses of water.

**Solution:**

Following are the two uses of water:

1. Agriculture: A major portion of the water is used in agriculture for irrigation purposes.
2. Domestic: At households, water is used for various purposes such as drinking, preparing food, cleaning dishes, washing clothes and watering the plants.

**Question:30**

Write two uses of forests.

**Solution:**

Following are two uses of forests:

1. Forests are useful in providing us with many natural resources as medicinal plants, oil, timber and food.
2. Forests help in regulating the climate of a place and also keep a check on global warming by balancing the levels of carbon dioxide and oxygen in the atmosphere.

**Question:31**

What are contaminants? Give an example.

**Solution:**

Contaminants are impurities. Impurities present in air in the form of exhaust soot particles is a contaminant of air. Waste water generated from domestic activities at households contains contaminants such as detergents, plastics, metal objects and human wastes.

**Question:32**

What is grit chamber? Give an example.

**Solution:**

A grit chamber is a sand and grit removal tank found in waste water treatment plants.

Example: A grit chamber is found in the primary treatment of a typical waste water treatment plant. It helps in the removal of sand, pebbles and grit from the waste water after the initial screening and settling of larger particles.

**Question:33**

Write three results of deforestation.

**Solution:**

The three consequences of deforestation are:

1. Depletion of many natural resources such as medicinal plants, timber, oil and spices.
2. Drastic change in global climate resulting in extinction of many biological species.
3. Excess release of green house gases such as carbon dioxide and methane into the atmosphere leading to global warming.

**Question:34**

Write two alternative methods of sewage disposal.

**Solution:**

Two alternative methods of sewage disposal are :

1. Biogas Plants: Biogas plants are usually common in villages in which the human and animal wastes are passed into the biogas plants through covered drains. Microorganisms present in the wastes break down the waste and produce biogas which is used in the generation of electricity.

2. Vermi-composting toilets: This is a safe, hygienic, water saving, innovative design in which earthworms are used to convert human wastes into compost.

**Question:35**

What is the difference between wind and monsoon wind?

**Solution:**

Wind	Monsoon wind
Moving currents of air from a particular direction on a daily basis is called wind.	Monsoon winds are seasonal changes in the direction of the prevailing winds.
Winds occur on a daily basis.	Monsoon winds occur on an annual basis.

**Question:36**

Write two differences between images formed by concave and convex mirrors.

**Solution:**

Image formed by concave mirror	Image formed by convex mirror
Images formed can be both virtual and real depending on the distance of the object from the mirror.	Images formed are only virtual.
Size of the image can be enlarged for certain positions and diminished for certain others.	Size of the image is always diminished.

**Question:37**

What are the effects of water scarcity on plants?

**Solution:**

Water is very important for the growth of the plant. If there is scarcity of water, plants would have reduced photosynthetic activity which would result in poor harvests. They will not reach the expected height and might get infected with diseases and eventually die. If the plants die, there will be no food and no oxygen, thus ending all kinds of life on earth.

**Question:38**

Write about the structure of the human heart in detail.

**Solution:**

Heart is the main organ in the circulatory system that circulates blood to all the parts of the body. It has four chambers that are surrounded by three thick muscular walls, i.e., epicardium, myocardium and endocardium.

The heart in humans is four-chambered. The two upper chambers of the heart are called the right and left atria while the two lower chambers are called right and left ventricles. The right and the left atria are separated by the inter-atrial septum and the two ventricles are separated by a wall called the inter-ventricular septum. The two atria receive blood from the body, while the ventricles pump blood to the body. The openings between the upper and lower chambers are controlled by valves that help the blood to flow in only one direction. The vessels that carry the pumped blood away from the heart are aorta and pulmonary artery while the pulmonary vein and the vena cava bring blood from the body into the heart.

**Question:39**

Write in detail about the three vegetative methods of reproduction. Describe two advantages of this kind of reproduction.

**Solution:**

The three methods of vegetative or asexual reproduction are:

1. Budding: In this method of reproduction, the body of the parent produces an offspring from a small bulb like projection called bud that grows and separates from the parent cell and forms a new cell.
2. Fragmentation: In this method, the body of the parent is split into smaller fragments when water and other nutrients are available. These smaller fragments or pieces grow and develop into new organisms.
3. Spore formation: In this method, spores are the vegetative (asexual) reproductive organs. These spores are covered by a hard protective layer which breaks down under favourable conditions to produce a new individual.

Following are the advantages of vegetative reproduction:

1. Reproduction takes place at a rapid rate under favourable conditions. A large number of new individuals are formed in less time from a single cell.
2. Offsprings formed out of vegetative reproduction have better chances of survival as large number of new individuals are produced.

**Question:40**

Explain fertilization and how it leads to fruit and seed formation.

**Solution:**

Fertilization: A process in which male and female gametes of a flower (pollen and egg respectively) fuse with each other to form a single celled zygote. This zygote develops into an embryo and finally into a new plant.

After the fertilization process, various parts of the plant show various changes. The sepal of the flower either withers away or remains attached even after the fertilization in certain plants. The stamen and anther of the flower withers away.

A fruit is formed when the ovary in the flower gets enlarged and the ovules present in the flowers forms the seeds.

**Question:41**

Explain in detail the difference between winds and monsoon winds.

**Solution:**

Winds	Monsoon Winds
Moving currents of air from a high pressure area to a low pressure area due to convection.	Seasonal winds that occur as a result of differential heating of land and oceans on the earth's surface.
Winds occur on a daily basis in a particular direction.	Monsoon winds are seasonal and reverse the prevalent direction of wind for certain periods of the year.

**Question:42**

Write notes on cyclones and tornadoes.

**Solution:**

Cyclones:

Cyclones are huge rotating winds caused by difference in the atmospheric pressure. Cyclones are formed from thunder storms and its formation depends on the speed and direction of the wind, humidity and temperature. The main source of energy are the warm moisture driven clouds that form in the oceans and seas. Cyclones can cause disasters such as floods and diseases and leave thousands of people homeless.

Tornadoes:

Tornadoes are ferocious and dangerous rotating columns of air extending from a thunderstorm to the surface of the earth.

They are usually referred as twisters or cyclones and come in many shapes and sizes with the narrow end touching the earth's surface. Tornadoes are short lived winds but can grab in anything and everything that comes in its path.