Time: 2 ½ Hours
Maximum Marks: 80

A#1: C
A#2: B
A#3: C
A#4: A
A#5: D
A#6: A
A#7: B
A#8: B
A#9: C
A#10: C
A#11: D
A#12: C
A#13: B
A#14: B
A#15: C

A#16: (i) White blood cells fight against germs that can cause damage to our body
(ii) Platelets form clots at wounded areas to stop further loss of blood.

A#17: Pollination refers to the transfer of pollen from the anther to the stigma of the flower. Pollination that occurs on the stigma of the same flower is called self-pollination whereas the pollination that occurs on the stigma of a different plant of the same kind is called cross-pollination.

A#18: When an electric current flows through a wire, it causes the heating of the wire. This effect is called the heating effect of electric current.

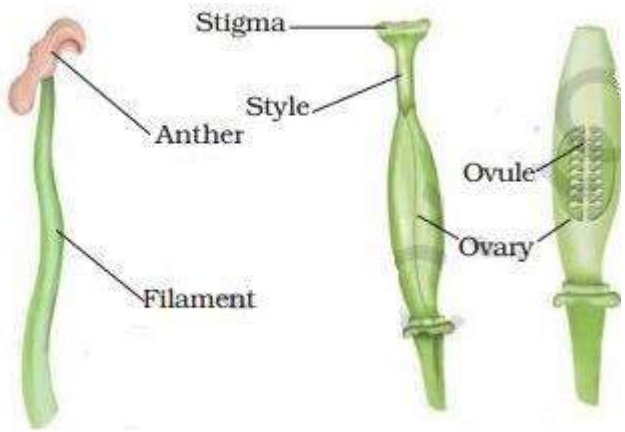
A#19: When an electric current flows through a wire, the wire behaves like a magnet. This effect is called the magnetic effect of electric current.

A#20: (i) Concave mirror - spherical mirrors with concave reflecting surfaces.
(ii) Convex mirror- spherical mirrors with convex reflecting surfaces.

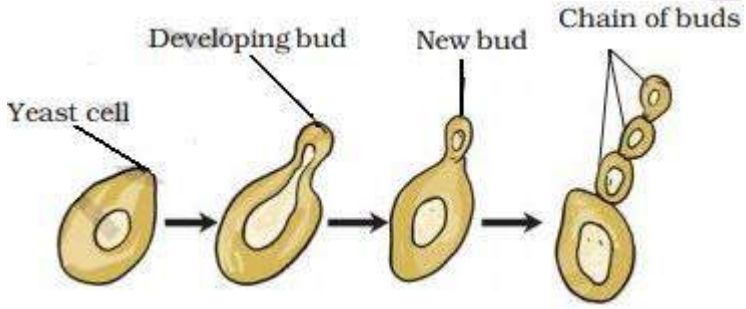
A#21: (i) Increase in the human population
(ii) Increase in the number of industries and industrial activity.

A#22: A forest is a system which comprises of various plants, animals, and micro-organisms coexisting together.

A#23:



A#24:

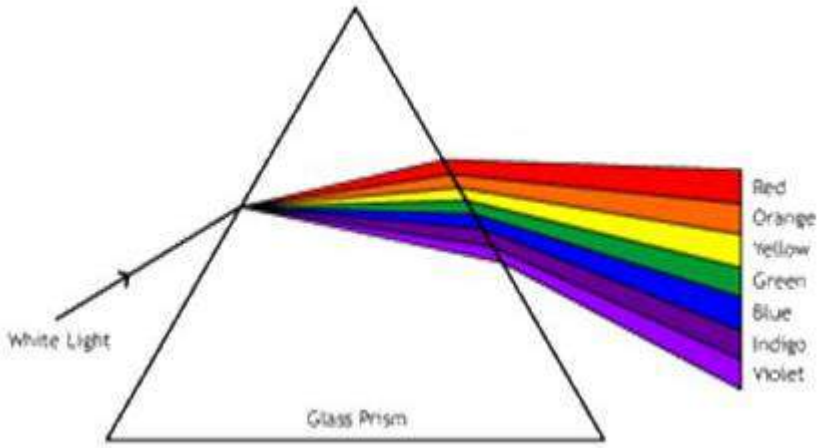


A#25: A simple pendulum is made up of a small metal ball which is suspended from a rigid body via a thread or a string. This metallic ball is referred to as the bob of the pendulum. The nudging of the bob begins a sequence of to and fro motions, which is an example of periodic or oscillatory motion. The time taken by a pendulum to complete one oscillation is called the time period of the pendulum.

A#26: (i) basic unit of time - second
(ii) unit of distance - meter
Therefore, (iii) unit of speed, can be given by meter/second. It can also be represented using other, larger units. E.g. kilometers/hour.

A#27: (i) bulb (ii) cell (iii) Switch (ON) (iv) Battery.

A#28:



A#29:

Concave Lens	**Convex Lens**
Thin in the middle, thick at the edges	Thick in the middle, thin at the edges
Also referred to as diverging lens	Also referred to as converging lens
Its focal length is negative	Its focal length is positive
Used to correct short-sightedness	Used to correct long-sightedness

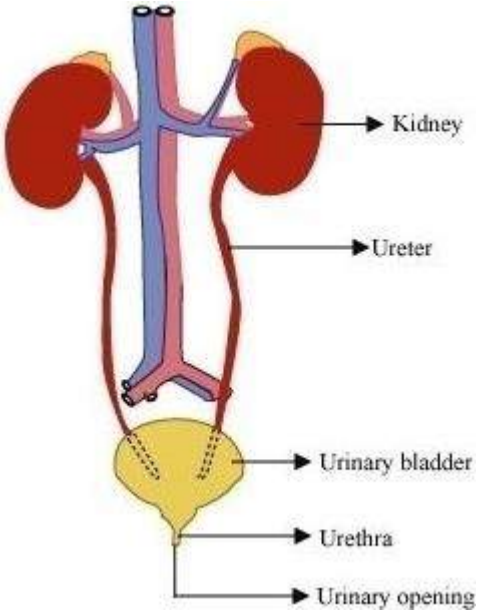
A#30:

- Forests can protect the soil from soil erosion.
- Forests can improve the quality of air by checking the carbon dioxide quantity in it.
- Forests also have a positive influence on the water cycle and the climate.
- They offer various products such as honey and gum.

A#31: Water is treated at wastewater treatment plants via the following processes:

- First, the wastewater is passed through bar screens to filter out large objects like plastic bags, cans, etc.
- The speed of the wastewater is now reduced so as to allow the sand and grit to settle down.
- Now, the water is made to settle in a tank which is sloped towards the middle. The solids that settle in the middle are now removed with a scraper. These solids are referred to as sludge.
- Now, the clarified water is pumped with air to promote the growth of aerobic bacteria. These bacteria consume the impurities remaining in the clarified water.

A#32:



A#33: Water can be found on earth in the following forms:
(i) as a solid, water can be found in the form of snow and ice at the poles of the earth and in extremely cold areas such as mountains.
(ii) as a liquid, water can be found in the oceans, rivers, lakes, and even underground.
(iii) water can also exist as a gas in the form of water vapor in the atmosphere.

A#34: (i) Avoiding the flushing of cooking oil and fats down the drain as they can harden and lead to the blockage of drainage pipes. These oils and fats can be thrown in the dustbin.
(ii) Paints, motor oils, insecticides, medicines, and other chemicals may kill the microbes which help in the purification of water. These chemicals must be thrown in the dustbin.
(iii) Cotton, tea leaves which are used, food remains, soft toys, etc. must be thrown into the dust bin since they can choke drains if washed down the drain. They also hamper the flow of oxygen which in turn adversely affects the degradation process.