

SECTION B:

QII.A Match the following:

(6QX1/2M=3M)

'A'

17. Zygote
18. Plane mirror
19. Decaying leaves
20. Dried sludge
21. Odometer
22. Fragmentation

'B'

- a. humus
- b. embryo
- c. speed
- d. virtual image
- e. spirogyra
- f. manure

17-b,18-d, 19-a, 20-f, 21-c, 22-e

B. Fill in the blanks

(6QX1/2M=3M)

23. The branches of tall trees look like roof over other plants is called as canopy
24. No medium is required in the transfer of heat by the process of radiation
25. The world water day is celebrated on 22 march every year
26. When the current is switched on in a room heater, it glows/ heats
27. An image formed by concave lens cannot be obtained on screen.
28. The motion of an object along straight line is said to be in rectilinear/liner motion.

C. Write true or false

(6QX1/2M=3M)

29. Any highly polished surface acts as a mirror. **T**
30. Oil and fats should not be released in to drains. **T**
31. Maple seeds are dispersed through animals. **F**
32. The symbols of all units are written in plural. **F**
33. Herbs form the understory in the forest. **T**
34. Longer line in the symbol for a cell represents its -ve terminal. **F**

D. VERY SHORT ANSWER TYPE QUESTIONS

(3QX2M=6M)

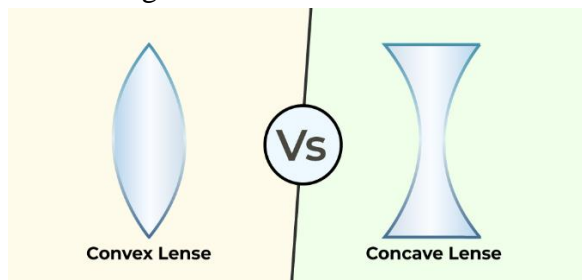
35. Why are forest called green lungs?

Forests are called "green lungs" because they release oxygen through photosynthesis, which is essential for animals to breathe, thus maintaining the balance of oxygen and carbon dioxide in the atmosphere; essentially acting like lungs for the planet.

36. Write two differences between real and virtual image

The images that can be obtained on a screen is called a real image and the image that cannot be obtained on the screen is called virtual image.

37. Draw diagram of concave and convex lens.



SECTION C

III. SHORT ANSWER TYPE QUESTIONS (any five)

(5QX3M=15M)

38. Untreated human waste is a health hazard. Explain

Untreated human excreta contain many pathogens and disease causing microbe like cholera, diarrhea, typhoid, polio, meningitis, hepatitis etc. The germs of these diseases can easily reach human population

through air, water or insects and through contaminated food and water. Thus, untreated human excreta are a health hazard.

39. A spaceship travels 36000 km in one hour. Express its speed in km/s.

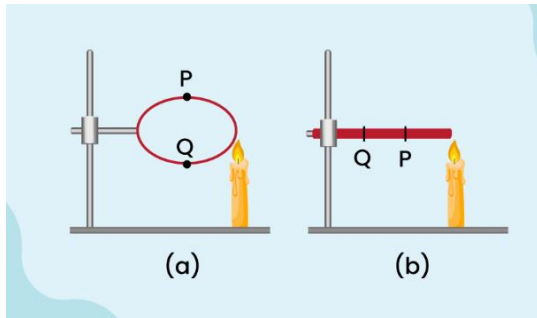
$$\text{SPEED} = \text{DISTANCE} / \text{TIME}$$

$$36000 / 60 * 60$$

$$= 1000 \text{ m/s}$$

40. In the arrangement (a) and (b) as shown in the figure, pins P and Q are fixed at a metal loop and an iron rod with the help of wax. In which case both the pins likely to fall at different times Explain.

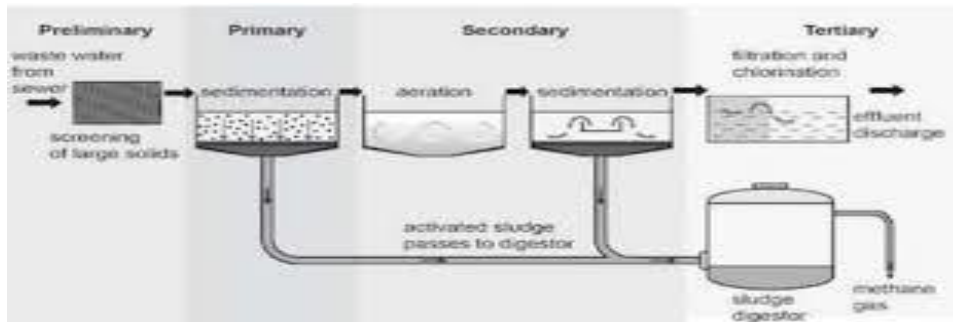
In case 'B' the pin P will fall before the pin Q because the heat will reach pin P first. In case of 'A', the heat travels in both the directions and pins P and Q will fall simultaneously.



41. Explain why there is a need of variety of animals and plants in a forest.

All plants and animals sustain the forest life and also $\text{CO}_2 - \text{O}_2$ cycle goes on due to animals and plants. Animals convert the dead and decaying matters into humus and increase the fertility of soil, thus enhancing plant growth. All food chains and food webs need variety of plants and animals.

42. Draw neat labelled diagram of waste water treatment plant



43. What is a battery? How can it be made using cells, explain with the help of a diagram.

A battery is defined as a combination of two or more cells that are connected together to provide electrical energy.



A battery of four cells



Connecting two cells together to make a battery

SECTION D

IV. LONG ANSWER TYPE QUESTIONS

(2QX5M=10M)

44 a) An electrician is carrying out some repairs in your house. He wants to replace a fuse with a piece of wire. Would you agree? Give reasons for your response. (3M)

No, we would not agree to allow to replace the fuse by a wire. Wires in the fuses are of specific melting points. So wd should always use ISI marked fuses in our houses to prevent short circuits.

b) Define MCB and write the functions of an MCB. (2M)

A miniature circuit breaker (MCB) is an automatically operated switch that protects electrical circuits from damage caused by excess current. MCBs are used in homes, offices, and factories.

45.a) Explain how animals dwelling in the forest help it grow and regenerate (3M)

Animals dwelling in the forest help it grow and regenerate in the following ways : (1) Animals help in dispersing plant seeds. (2) Decaying animal dung provides nutrients for plants to grow. (3) Microorganisms convert the dead plants and animals to humus.

b) Forest is a dynamic living entity. Explain(2M)

Forests are called dynamic living entity because of the various plants animals and microorganisms. The wide variety of animals helps the forest to regenerate and grow. Decomposers help in maintaining the supply of nutrients to the growing plants in the forest. In one sentence forests are the lifeline for the forest-dwelling communities. Therefore the forest is a dynamic living entity full of life and vitality.

SECTION E

V. CASE BASED QUESTIONS (Answer the questions based on the case)

(4QX1M=4M)

46. Sewage is wastewater released by homes, industries, hospitals, offices and other users. It also includes rainwater that has run down the street during a storm or heavy rain. The water that washes off roads and rooftops carries harmful substances with it. Sewage is a liquid waste. Most of it is water, which has dissolved and suspended impurities. In a home or a public building generally one set of pipes brings clean water and another set of pipes takes away wastewater. Imagine that we could see through the ground. We would see a network of big and small pipes, called sewers, forming the sewerage. It is like a transport system that carries sewage from the point of being produced to the point of disposal, i.e. treatment plant.

Answer the following

- i. Sewage is a _____
- ii. Define sewers.
- iii. Name the sources from where waste water is released.
- iv. What does the sewage water consists of?