



PRE-MIDTERM (2023 - 24)

Class: VII
Date: 23-05-2023

Sub: SCIENCE (086)
Set - II

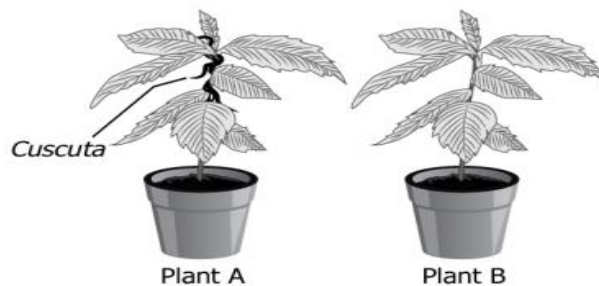
Max Marks: 30
Time: 1 hour

General Instructions:

- i. All questions are compulsory. Marks are indicated against each section.*
- ii. The question paper comprises 4 **pages** and **15** questions in 5 sections A, B, C, D and E.*
- iii. Q 1 to Q 4 in **section A** -MCQ carries **ONE** mark each. Write the correct answer along with the option only in the answer script.*
- iv. Q 5 to Q 7 in **section A** -Assertion and Reason carry **ONE** mark each.*
- v. Q 8 to Q 10 in **section B** are short Answer Type Questions and carry **TWO** marks each.*
- vi. Q 11 TO Q 13 in **section C** are Short Answer Type Questions and carry **THREE** marks each.*
- vii. Q 14 in **section D** are Long Answer Type Questions and carry **FIVE** marks each.*
- viii. Q 15 in **section E** Case study/paragraph Questions carry **THREE** marks each.*
- ix. Write the same question number as given in the question paper.*
- x. Ink killer or whitener should not be used in the answer script.*
- xi. Diagrams should be drawn using a pencil.*

SECTION A (7X1=7)

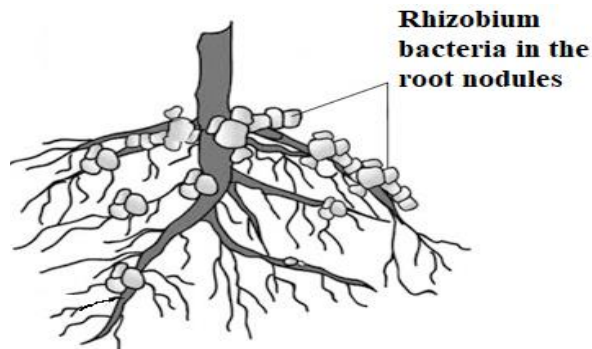
1. Cuscuta is a yellow parasitic plant which climbs on other plants as it lacks chlorophyll. A student sets up an experiment using two potted plants, one with Cuscuta and others without it as shown:



Which of these plants will show more growth?

- a) Plant A, as Cuscuta provides valuable nutrients to host plants for photosynthesis.
- b) Plant B, as Cuscuta shares the chlorophyll of the host plants to synthesise its own food.
- c) Plant B, as Cuscuta uses readymade food of plant A that weakens the host plant.
- d) Plant A, as Cuscuta shares its readymade food with host plants to increase their combined growth.

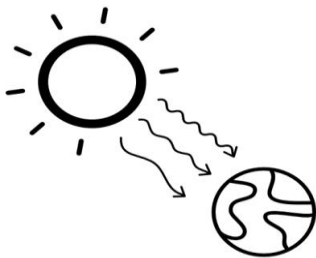
2. A farmer observes the growth of Rhizobium on the roots of his pea plants as shown:



What is the role of Rhizobium bacteria present in the root nodules of a leguminous plant?

- a) Rhizobium helps plants to use oxygen.
- b) Rhizobium takes atmospheric Nitrogen and converts it into a simple form.
- c) Rhizobium takes solar energy and converts it into a simple form.
- d) Rhizobium provides shelter to the plant.

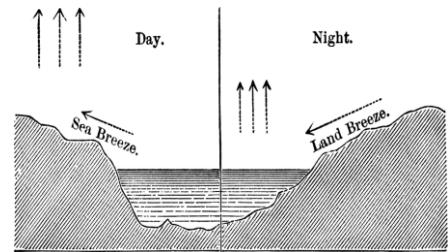
3. Identify the methods of heat transfer in the given situations:



A- Heat from the sun reaches the earth.



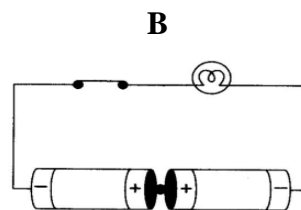
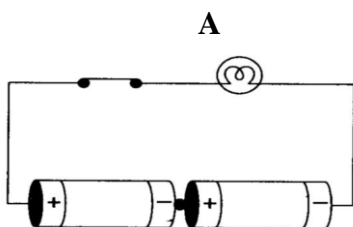
B- a metal spoon becomes hot when kept inside a bowl of hot soup.



C- Sea and land breezes

- a) A- conduction, B- Radiation, C- Convection
- b) A- Radiation, B- Convection, C- Conduction
- c) A- Convection, B- Radiation, C- Conduction
- d) A- Radiation, B- Conduction, C- Convection

4. Observe the given figures and identify the circuit/ circuits which will cause the bulb to glow.



- a) Only A
- b) Only B
- c) Both A and B
- d) Neither A nor B

5. **Assertion (A):** Lichens are a symbiotic association of algae and fungi.

Reason (R): The fungus supplies food to the algae and, in return, the algae supply water and minerals to the fungus.

6. **Assertion (A):** Woollen clothes keep the body warm in winter.

Reason (R): There is air trapped in between woollen fibres and air is a bad conductor of heat.

7. **Assertion (A):** A battery is a combination of two cells only.

Reason (R): The positive and negative terminals are generally marked on the cells.

SECTION B (3X2=6)

8. a. Give **one point** of difference between autotrophic and heterotrophic nutrition.

b. Two potted green plants A and B of the same kind were taken to perform an experiment. Plant A was kept in a dark room, while Plant B was kept in sunlight for 3–4 days. A leaf from each of the plants was taken to perform the iodine test. Which of the leaves turned blue-black in colour and why?

9. a) Why is it more comfortable to wear white or **light-coloured clothes in summer** and **dark-coloured clothes in winter**?

b) What is the use of a kink in the clinical thermometer?

10 a) The handle of a cooking utensil is covered with thick plastic. Explain why.

b) Why is it not advisable to use a laboratory thermometer to measure the temperature of human body?

SECTION C (3X3=9)

11. a) Explain how pitcher plants get their nutrition?

b) Why do we consider Mushrooms as saprotrophs?

12. a) Mention **any two** precautions to be taken while measuring the temperature using a laboratory thermometer.

b) An iron ball at 40°C is dropped in a mug containing water at 40°C, will there be any heat transfer between the iron ball and the water present in the mug? Why?

13. a) Give **one difference** between open and closed circuits with neat diagrams.

b) Describe the role of the following components in an electric circuit.

i. A Switch

ii. A Cell

SECTION D (1X5=5)

14. a). What is meant by photosynthesis? Also, write the **word equation** for the same.
b) Draw a neat and **labelled diagram** showing the process of photosynthesis.
c) How do stomata help plants?

SECTION E (3X1=3)

15. Dinesh was suffering from a fever so his mother took him to a doctor. The doctor first took a thermometer immersed in a bottle containing some solution and he then gave a jerk to the thermometer. Then the doctor kept a clinical thermometer under Dinesh's tongue and noted the reading of the thermometer after taking it out of his mouth. He told Dinesh that he has a fever as his temperature was found to be 38.5°C. Dinesh was curious to know about the solution in which the thermometer was dipped and the reason why the doctor has to give a jerk. So, he asked the doctor to explain the reason. He also asked the doctor to explain how he concluded that he is having a fever. The doctor explained to him that the thermometer should be washed before and after use, preferably with an antiseptic solution to prevent the spread of germs. The jerk is given to the thermometer a few times to bring the level of the mercury down. Before use, the mercury level should be below 35°C. This is to ensure an accurate reading. The doctor told him that the average temperature of a healthy person is 37°C. If the temperature goes above 37°C then the person is said to be suffering from fever.

- (i) What is the normal temperature of a human body?
(ii) Why did the doctor give a jerk on a clinical thermometer?
(iii) Why is it necessary to wash a clinical thermometer with an antiseptic solution before and after use?

MARKING SCHEME

1	c) Plant B, as Cuscuta uses readymade food of plant A that weakens the host plant.	1
2	b) Rhizobium takes atmospheric Nitrogen and converts it into a simple form.	1
3	d) A- Radiation, B- Conduction, C- Convection	1
4	a) Only A	1
5	iii) A is true and R is false	1
6	i) Both A and R are true and R is the correct explanation of the A	1
7	iv) A is false and R is true	1

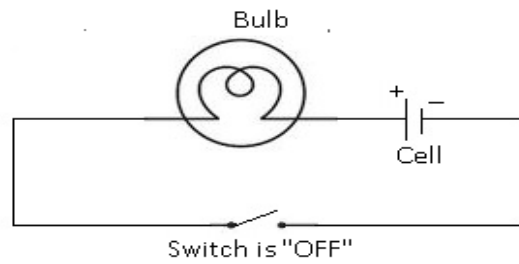
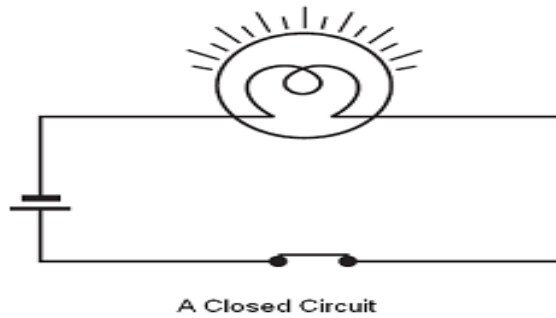
SECTION B(3X2=6)		
8	<p>a. The mode of nutrition in which organisms synthesise their own food is called autotrophic nutrition. The mode of nutrition in which organisms do not prepare their own food but are directly or indirectly dependent on plants for food is called heterotrophic nutrition</p> <p>b. Plant B - It performed photosynthesis in the presence of sunlight and starch was formed. This starch showed a blue-black colour with iodine. Plant A did not perform photosynthesis in the absence of sunlight and no starch was formed.]</p>	<p>$\frac{1}{2}+\frac{1}{2}=1$</p> <p>$\frac{1}{2}+\frac{1}{2}=1$</p>
9	<p>a. Light-coloured clothes reflect heat/absorb less heat, whereas dark-coloured clothes absorb more heat.</p> <p>b. Kink prevents immediate backflow of mercury from the tube to the bulb, thus it allows us to read the temperature conveniently.]</p>	<p>$\frac{1}{2}+\frac{1}{2}=1$</p> <p>1</p>
10	<p>a. Plastic is a bad conductor of heat due to which the heat from the vessel does not flow to its handle and we can hold it easily.</p> <p>b. A lab thermometer can't be used to measure body temperature as it does not have a kink to prevent the backflow of mercury to the bulb.</p>	<p>1</p> <p>$\frac{1}{2}+\frac{1}{2}=1$</p>
SECTION C(3X3=9)		
11	<p>a. Pitcher plants have pitcher-like structures which are modified parts of the leaf. The apex of the leaf forms a lid that can open or close the mouth of the pitcher. When an insect lands in the pitcher, the lid closes and the trapped insect gets entangled in the hair present inside the pitcher. The insect is digested by the digestive juices secreted in the pitcher.</p> <p>b. They grow on dead and decaying matter like dung, and old rotten logs which are rich in organic matter.</p>	<p>2</p> <p>1</p>
12	<p>a. i) Handle the thermometer with care. If it hits some hard object, it can break.</p> <p>ii) Should be kept upright not tilted.</p> <p>iii) Bulb should be surrounded from all sides by the substance of which the temperature is to be measured. The bulb should not touch the surface of the container.</p> <p>b. The heat will not get transferred between the water and the iron ball as both of them are of the same temperature. For the heat to get transferred from one body to another, there should be a temperature difference.</p>	<p>$1+1=2$</p> <p>1</p>

13

a.

Open circuit	Closed circuit
i) A circuit that is not complete and does not allow current to pass through it is called an open circuit.	i) A circuit that is complete and allows electric current to pass through it is called a closed circuit.]
ii) The switch is in the OFF position and the circuit is incomplete and hence the bulb doesn't glow.	ii) The switch is ON and the circuit is complete, so the bulb glows.
iii) No current flows through any part of the circuit.	iii) The current flows throughout the circuit instantly.

(Any one point) $\frac{1}{2}+\frac{1}{2}=1$

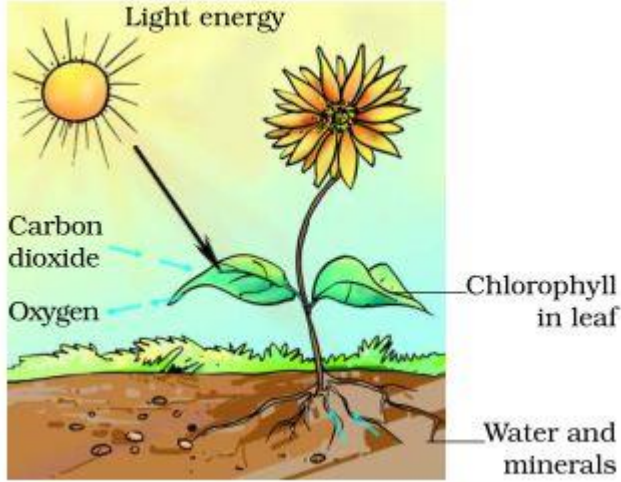


1+1=2

b. i. A switch is a device which helps in making or breaking a circuit.

ii. A cell is a source of electric current

SECTION D

14	<p>a. The process by which green plants make their own food from carbon dioxide and water by using sunlight energy in the presence of chlorophyll is called photosynthesis.</p> <p>The word equation for it is -</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> $\text{Carbon dioxide} + \text{Water} \xrightarrow[\text{Chlorophyll}]{\text{Sunlight}} \text{Glucose} + \text{Oxygen}$ </div>  <p>b.</p> <p>c. Exchange of gases/transpiration</p>	<p>1+1=2</p> <p style="text-align: center;">2</p> <p style="text-align: center;">1</p>
SECTION E		
15	<p>i. 37°C.</p> <p>ii. The jerk is given to the thermometer a few times to bring the level of the mercury down. Before use, the mercury level should be below 35°C. This is to ensure an accurate reading.</p> <p>iii. The thermometer should be washed before and after use, preferably with an antiseptic solution to prevent the spread of germs.</p>	<p>1X=3</p>
TOTAL		30