

GENERAL SCIENCE NOTES FOR 7TH CLASS (FOR ISLAMABAD)

1

PLANTS SYSTEM

Questions and Activities

A. MCQs (Choose the correct option)

1. The root system which can get water from deep underground sources is:

- a. Fibrous roots
- b. Tap roots
- c. Storage roots
- d. Root nodules

Ans: b. Tap roots

2. Which of the following is not an organ of plant?

- a. Epidermis
- b. Root
- c. Stem
- d. Leaf

Ans: a. Epidermis

3. Vascular bundles are present in every part of the plant. They are made up of:

- a. Xylem only
- b. Phloem only
- c. Xylem and phloem
- d. Xylem, phloem and root hair cells

Ans: c. Xylem and phloem

4. Anna liked to grow plants on her terrace. The plants were getting light and water everyday but they were not growing properly. What suggestion can you give her to improve plant growth?

- a. Add sugar to plant pots
- b. Give water once a week

c. Add compost fertilizer to plant pots

d. Shift them indoors

Ans: c. Add compost fertilizer to plant pots

5. If water available to plants become less, then stomata are closed even at daytime. This protects plants from:

- a. photosynthesis
- b. Respiration
- c. Wilting
- d. Transport of water

Ans: c. Wilting

6. The protective layer around plant parts is:

- a. Epidermis
- b. Cortex
- c. Mesophyll
- d. Vascular bundle

Ans: a. Epidermis

7. If the concentration of carbon dioxide increases in the air during daytime the process of

- a. photosynthesis will decrease.
- b. respiration will decrease.
- c. photosynthesis will increase.
- d. respiration will increase.

Ans: c. photosynthesis will increase.

8. Plants perform respiration all the time. The purpose of respiration in plants is to

- a. prepare food.
- b. release energy.
- c. absorb energy.
- d. maintain healthy growth.

Ans: b. release energy.

9. If you stay under trees at night, you can feel dizziness due to

GENERAL SCIENCE NOTES FOR 7TH CLASS (FOR ISLAMABAD)

- a. high level of oxygen and low level of carbon dioxide.
- b. low level of oxygen and high level of carbon dioxide.
- c. poisonous gases released by trees.
- d. ghosts living in trees.

Ans: b. low level of oxygen and high level of carbon dioxide.

10. Which of the following is the correct word equation for respiration?

- a. Carbon Dioxide + Water → Glucose + oxygen
- b. Carbon Dioxide + Water + sunlight → Glucose + Oxygen
- c. Glucose + Oxygen → Carbon Dioxide + Water
- d. Glucose + Oxygen → Carbon Dioxide + Water + Energy

Ans: d. Glucose + Oxygen → Carbon Dioxide + Water + Energy

B. True and False (correct the statement if it False)

1. Exchange of gases in plants takes place through tiny holes called stomata located on the margins of leaves.

Ans: True

2. The rate of photosynthesis is slow in variegated leaves because there is maximum amount of chlorophyll in them.

Ans: False. The rate of photosynthesis is slow in variegated leaves because there is minimum amount of chlorophyll in them.

3. Respiration only takes place in animal cells because they need energy.

Ans: False. Respiration can take place in plants and animal cells because they need energy.

4. The job of the root hairs is to protect the roots from damage.

Ans: False. The job of root hairs is to absorb water and minerals from the soil.

5. Xylem is dead tissue while phloem is living tissue.

Ans: True.

C. Short questions.

1. What are the three function of roots?

Ans: The functions of roots are as under:

(i) They absorb water and minerals from the soil by the process of diffusion.

(ii) They provide support in anchoring of the plant body to ground.

(iii) They store food and minerals.

2. How stomata help in the process of photosynthesis?

Ans: The stomata controls the entrance of carbon dioxide in the leaf, the release of oxygen and the flow of water out of the leaf. These parameters are essential for photosynthesis process. Thus, stomata control the rate of photosynthesis.

3. Why respiration takes places in plants?

Ans: Respiration also takes place in plants to get energy. In plant cells glucose react with oxygen to form carbon dioxide, water and energy. Carbon dioxide and

GENERAL SCIENCE NOTES FOR 7TH CLASS (FOR ISLAMABAD)

water are the waste products.
This process mainly takes place in the mitochondria.

4. How is photosynthesis important for:

- a. plants
- b. human and other animals
- c. atmosphere

Ans: Importance of photosynthesis for plants.

Plant prepare their food in the form of glucose by photosynthesis which is essential for their life and growth. In the absence of photosynthesis, They are unable to prepare their food and will ultimately die.

b. Importance of photosynthesis for human and other Animals.

Ans: Living things cannot survive without food and oxygen. Photosynthesis is the only chemical process during which plants prepare food and oxygen for themselves and for all the other living things. The plants and their by-products such as fruit etc. are used as food by animals and humans as their food which is vital for their survival. The oxygen released in photosynthesis is also used by all living things for respiration. If there is no food then there will be no life on Earth.

c. Importance of photosynthesis for atmosphere

During photosynthesis plants use light energy from the sun, carbon dioxide from air and water from

the soil to make glucose and oxygen. The absorption of carbon dioxide and release of oxygen in photosynthesis helps to maintain a balance of these gases in air. Hence photosynthesis is very important for atmosphere.

D. Long questions

1. Compare the properties of xylem and phloem.

Ans:

XLYEM	PHLOEM
(i). Xylem are made up of dead tissues. In trees new xylem is made each year forming rings in the tree trunk.	Phloem are made of living tissues
(ii) Xylem have thick and strong cell walls.	They have thin cell walls.
(iii) It transports water and dissolved minerals from the roots to the leaves through the stem.	It transports food in the form of sugar solution from leaves to all parts of the plant.
(iv) Direction of flow water and dissolved minerals is only in the upwards direction.	Sugar solution can move in both direction i.e. in upwards and downward direction.

2. Photosynthesis and respiration are two different processes. Differentiate between them.

Ans:

GENERAL SCIENCE NOTES FOR 7TH CLASS (FOR ISLAMABAD)

Photosynthesis	Respiration
(i) In photosynthesis plants use carbon dioxide and water in the presence of sunlight to produce glucose and oxygen.	In respiration process oxygen and glucose are used to power the activities of cells and carbon dioxide and water are released.
(ii) It takes place during the day.	It takes place day and night.
(iv) It takes place only in plants.	It takes place in all living things i.e. plants, animals and humans.
(v) Energy is stored.	Energy is released.

E. Structure questions



1. The following diagram shows the two processes taking place in the plant cell i.e. photosynthesis and cellular respiration.

a. Which process takes place only in green parts of the plant?

Ans: Photosynthesis process takes place only in green Parts of the plant.

b. Which process takes place in all living cells, at all times?

Ans: Respiration process takes place in all living cells, at all times.

c. Which process only takes place during the day time?

Ans: Photosynthesis only takes place during the day time.

d. Which process can help to balance carbon dioxide level in the air?

Ans: Photosynthesis process can help to balance carbon dioxide level in the air.

e. Which structure acts as a solar panel?

Ans: Mitochondria acts as a solar panel.

2. The table shows the transpiration rate of a plant in different conditions.

Conditions	Transpiration rate (mm/min)
Darkness	1
Bright light	17
Still air	9
Moving air	21
Dry air	11
Moist air	5
Warm air	16
Cold air	6
Dry soil	2
Moist soil	18

a. Which condition causes the fastest rate of transpiration?

Ans: Moving air causes the fastest rate of transpiration.

b. What sort of conditions can increase the rate of transpiration?

Ans: The conditions like bright light, moving air, dry air, warm air and moist soil can increase the rate of transpiration.

GENERAL SCIENCE NOTES FOR 7TH CLASS (FOR ISLAMABAD)

c. What sort conditions can decrease the rate of transpiration?

Ans: Darkness can decrease the rate of transpiration.

d. How does transpiration help in the water cycle?

Ans: Transpiration is the process in which plant roots absorb water and then release the water in the form of vapour through the leaves. Transpiration is an important factor in the water cycle as it is one of the major sources of water into the atmosphere.

F. Project Work

Make a poster on photosynthesis and respiration.

Ans: Practical work.

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2

HUMAN RESPIRATORY AND CIRCULATORY SYSTEM

Questions and Activities

A. MCQs (Choose the correct option)

1. A team of climbers was climbing a high mountain. When they reached near top they felt difficulty in breathing because at high altitude there is

- a. more oxygen
- b. less oxygen
- c. more carbon dioxide
- d. low temperature

Ans: b. less oxygen

2. The exchange of substances between blood and body cells can take place at the:

- a. Capillaries
- b. Veins
- c. Arteries
- d. Heart

Ans: a. Capillaries

3. A person affected with anaemia looks pale and feels tired. All his body cells are getting

- a. less food
- b. less oxygen
- c. less water
- d. less carbon dioxide

Ans: b. less oxygen

4. The exchange of gases between blood and air takes place at:

- a. Trachea
- b. Bronchi
- c. Bronchioles
- d. Alveoli

Ans: d. Alveoli

5. Cellular respiration always requires

- a. glucose and oxygen
- b. glucose
- c. glucose, oxygen and carbon dioxide
- d. alcohol, Lactic acid and carbon dioxide

Ans: a. glucose and oxygen

6. Valves are flaps that keep blood flowing in one direction. Valves are found in

- a. Artery and vein
- b. Artery, vein and capillary
- c. Vein and heart
- d. Artery, vein, capillary and heart

Ans: c. Vein and heart