

Q1- What is the term for a person engaged in the study of botany?

Answer: A person engaged in the study of botany is called a **botanist**.

Q2- What are the special characteristics of plants that distinguish them from animals?

Answer: Some special characteristics of plants include being **multicellular, non-motile, autotrophic, having cell walls made from cellulose, carrying out photosynthesis using chlorophyll, storing carbohydrates as starch, having indeterminate growth, and reacting to environmental stimuli.**

Q3- Why should we care about the study of plants? List three reasons.

Answer:

- 1- Plants provide food for human beings.
- 2- Plants contribute to the majority of Earth's biomass.
- 3- Plants play a crucial role in creating and maintaining the oxygen-rich atmosphere through photosynthesis.

Q4- Name two classes of seed plants and briefly describe each.

Answer:

- 1- **Gymnosperms:** Woody, perennial plants with reproductive organs borne in cones. Examples include conifers like pine and cypress.
- 2- **Angiosperms:** Flowering plants that bear seeds in fruits. They are divided into monocots and dicots based on the number of cotyledons or seed leaves.

Q5- What is the study of the external features of living organisms called?

Answer: The study of the external features of living organisms is called **Morphology**.

Q6- In which branch of botany would the study of plant diseases and their control be categorized?

Answer: **Plant Pathology** is the branch of botany that deals with the study of plant diseases and their control.

Q7- Explain the significance of plant breeding in modern agriculture.

Answer: Plant breeding is important in modern agriculture for the production and development of new high-yielding and disease-resistant varieties of various crop plants, contributing to increased agricultural productivity.

Q8- What does the field of pharmacognosy within botany focus on?

Answer: **Pharmacognosy** is concerned with the use of plants and plant parts in the drug industry.

Q9- What are the two main groups (Classes) into which angiosperms are divided, based on the number of cotyledons?

Answer The two main groups are **Monocotyledoneae (Monocots)** and **Dicotyledoneae (Dicots)**.

Q10- What is the term for the science that deals with the origin of living beings and their gradual changes?

Answer: Evolution is the science that deals with the origin of living beings and their gradual changes.

Q11- How do plants contribute to air purification, especially in the context of CO₂ pollution?

Answer: Through the process of photosynthesis, plants use CO₂ during food production and release oxygen into the environment, helping purify the air.

Q12- In the study of botany, what does the term "**Embryology**" focus on?

Answer: Embryology in botany is the study of the early development of plants from fertilized eggs, including the structure of the embryo and its development.

Q13- What is the significance of the study of **paleontology** in botany?

Answer: Paleontology in botany involves the study of **fossil plants**, providing insights into the **historical development** and **evolution of plant life**.

Q14- Name one important aspect covered in the field of **physiology** in botany.

Answer: Physiology in botany covers various functional aspects of plants, including **metabolism, nutrition, growth, movement, and respiration**.

Q15- How do plants enhance the aesthetic value of an environment?

Answer: Plants enhance the aesthetic value of a place through their visual appeal, colors, shapes, and overall beauty, providing pleasure to individuals in their vicinity.

Q16- What is the primary focus of the branch of botany known as **cytology**?

Answer: Cytology in botany focuses on the study of the cell and its various inclusions, particularly the behavior of the nucleus during cell division.

Q17- Choose appropriate phrases

- 1- What is the primary function of the xylem and phloem in plants?
 - a) Support and structure
 - b) Reproduction
 - c) Nutrient transport**
 - d) Photosynthesis
- 2- What is the branch of botany that deals with the study of early developments of plants from fertilized eggs?
 - a) Genetics
 - b) Embryology**
 - c) Morphology
 - d) Physiology
- 3- Which group of plants is represented primarily by cone-bearing trees (conifers) and palm-like plants called cycads?
 - a) Angiosperms
 - b) Gymnosperms**
 - c) Ferns
 - d) Mosses
- 4- What is the primary focus of the branch of botany known as cytology?
 - a) Study of fossils
 - b) Study of cell structure**
 - c) Study of plant diseases
 - d) Study of plant breeding
- 5- In economic botany, what type of resources does the field primarily deal with?
 - a) Energy resources
 - b) Mineral resources
 - c) Plant resources used by humans**
 - d) Animal resources
- 6- What is the significance of plant breeding in modern agriculture?
 - a) Preservation of endangered species
 - b) Development of new plant species
 - c) Production of high-yielding and disease-resistant plant varieties**
 - d) Conservation of natural habitats
- 7- Which class of angiosperms usually has floral parts in multiples of three?
 - a) Monocotyledoneae (Monocots)**
 - b) Dicotyledoneae (Dicots)
 - c) Gymnosperms
 - d) Spermatophyta
- 8- What is the term for a person engaged in the study of botany?
 - a) Zoologist

- b) Biologist
 - c) Botanist**
 - d) Ecologist
- 9- What is the primary role of plants in creating Earth's oxygen-rich atmosphere?
- a) Absorbing carbon dioxide
 - b) Releasing oxygen through photosynthesis**
 - c) Producing nitrogen
 - d) Converting sunlight into energy
- 10- In which branch of botany would the study of plant diseases and their control be categorized?
- a) Ecology
 - b) Plant Pathology**
 - c) Cytology
 - d) Genetics
- 11- What is the main difference between monocots and dicots?
- a) Number of seed leaves (cotyledons)**
 - b) Presence of flowers
 - c) Method of reproduction
 - d) Leaf structure
- 12- What does the field of pharmacognosy within botany focus on?
- a) Study of cell structure
 - b) Classification of plants
 - c) Use of plants and plant parts in the drug industry**
 - d) Plant breeding techniques
- 13- What is the science that deals with the origin of living beings and their gradual changes?
- a) Ecology
 - b) Genetics
 - c) Evolution**
 - d) Paleontology
- 14- Which branch of botany covers the study of fossil plants and animals?
- a) Physiology
 - b) Embryology
 - c) Paleontology**
 - d) Cytology
- 15- What aspect of plants contributes to air purification?
- a) Respiration
 - b) Transpiration
 - c) Photosynthesis**
 - d) Germination