

Biology (New Book) - 9th Class Biology Urdu Medium Chapter 1 Preparation

Q1. What are basic characteristics of hypothesis.

Ans 1: Characteristics of Hypothesis:

A hypothesis has the following characteristics.

- > It is proposed statement to answer the problem
- > It always matches with the available observations.
- > It can be tested through experiments
- > There is always a way to disprove the hypothesis.

Q2. Differentiate between Zoology and Botany

Ans 1: Botany: The division of biology which deals with the study of plants is called botany

Ans 2: Role of Observation : Observation are very important step in solving a biological problem Observations are made by five senses of vision, hearing, smell, taste and touch.

Ans 3: Role of Experimentation : It is the most important step of biological method, Experiments are performed to prove if hypothesis is true or not. The deductions drawn from the hypothesis are subjected to rigorous testing Through experimentation, biology learns which hypothesis is correct

Ans 4: e.g. mustard, rose. The division of biology which deals with the study of animals is called Zoology e.g. Frog.

Q3. How interdisciplinary collaboration is helpful in medical research?

Ans 1: Interdisciplinary collaboration promotes innovation and addresses real world challenges in medical research

Ans 2: Example: In cancer research oncologist, Biologist biochemists, geneticists, pharmacologists and statisticians work in collaboration.

Q4. Define Marine Biology

Ans 1: It is the branch of Biology that deals with the study of life in oceans and salt water

Ans 2: Application : It helps to understand ocean biodiversity, discover new species, and address marine conservation issues.

Ans 3: Example: Coral reefs support a wide variety of marine life.

Q5. Define Palaeontology

Ans 1: It is the branch of Biology that deals with the study of fossils

Ans 2: Application : The examination of fossils helps scientists to know the evolutionary history of organisms.

Ans 3: Example: Dinosaur fossils provide evidence of giant reptiles that roamed the Earth millions of years ago

Q6. How can a scientist apply the scientific method to confirm an observation that a certain plant species grows more quickly in shady places than in direct sunlight?

Ans 1: Scientist will use the following steps of scientific method to verify the given observation about the effect of sunlight on the growth of certain plant species.

Ans 2: 1. Hypothesis: According to the given observations scientist will form a hypothesis that the plant species grows more quickly in shady places than in direct sunlight.

Ans 3: 2. Experimentation : The scientist will set up two groups of the same plant species under controlled conditions, one in shady areas and the other in direct sunlight. Factors like soil type, water, and nutrients would be constant.

Ans 4: Data collection and analysis: After experimentation the scientist will measure the growth of plants in both groups over a set period and will compare the results.

Ans 5: Conclusion: Based on the data, the scientist decides if the hypothesis is correct. If the shady plants grow faster, the hypothesis is confirmed. If not, the scientist may need to rethink the idea.

Q7. Define Anatomy

Ans 1: It is the branch of Biology that explores the internal physical structure of organisms particularly humans.

Ans 2: Application : It helps in disease diagnosis, medical device development, and improving quality of life
Example: The study of the organs of the digestive system.

Q8. Difference between Theory and Principle

Ans 1: Theory:- If the hypothesis is found to be correct then it becomes a theory. It is supported by a number of evidences. A theory can be changed if better evidence is available
Example: The theory of evolution

Ans 2: Principle:
A theory that has been verified and appears to have wide application may become a biological principle or law
Example: Mendel's laws of inheritance

Q9. Define Pathology

Ans 1: It is the study of diseases, their causes, and effects,

Ans 2: Application : Pathology helps in disease diagnosis, treatment development, and disease prevention.

Ans 3: Example: Cancer, for instance, is characterized by uncontrolled growth and spread of abnormal cells.

Q10. Difference between Morphology and Physiology

Ans 1: Morphology:

Defination : The study of the size, shape and structure of animals, plantss and micororganismsm is called morphology. This briach is also called external morphology

Ans 2: Example: Morphology of a flowerign plant includes the structure of roots, ste, leaves, flowers and fruit

Ans 3: Physiology:

Defination : It is the branch of biology that deals with the functioning of body parts.

Ans 4: Example Circulatory system transports vital substances throughout the body
