

1. Biology Bio mean life and Logy mean study Definition The study of living organisms is called Biology Or The science of life and living organisms is called Biology. ➤ Biology is divided into several specific fields that cover their morphology, physiology, anatomy, behavior, origin and distribution. ➤ An organism is a living entity containing of one cell e.g. bacteria ➤ An organism is a living entity containing of several cells e.g. animals, plants and fungi.

2. What is life? Life is form from various chemical combination like carbon, hydrogen, nitrogen, oxygen, sulfur, and phosphorus. These form the nucleic acids, proteins, carbohydrates, and lipids that are the fundamental components of living matter.

3. Characteristics of life include:

1. Living organisms are responsiveness to the environment (nerve impulses).
2. They grow and change their body size and shape (cell division).
3. They have the ability to reproduce and increase their population (reproduction).
4. They are performing the function of metabolism and respiration (metabolisms).
5. They have ability to maintain homeostasis (excretion and Absorption).
6. They are made from cells.
7. Their traits pass to offspring.

4. Main Branches of Biology Some branches of biology are below:

1. Botany: The study of Plants and their features.
2. Zoology: The study of animals and their features.
3. Microbiology: The study of Microorganisms and their features.
4. Taxonomy: It is the science of identification, nomenclature and classification of organisms.
5. Morphology: It is the study of external form, size, shape, color, structure and relative position of several living organ of living organisms.
6. Anatomy: It is the study of internal structure.
7. Histology: It is the study of tissue organization and structure.
8. Cytology: It is the study of form and structure of cells containing the behavior of nucleus and other organelles.
9. Cell Biology: It is the study of morphological, organizational, biochemical, physiological, genetic, developmental, pathological and evolutionary features of cell and its components.
10. Molecular Biology: It is the study of the nature of physicochemical organization, synthesis working and interaction of bio-molecules.
11. Physiology: It is the study of different types of body functions and procedures.
12. Embryology: It is the study of fertilization, growth, division and distinction of the zygote into embryo.
13. Ecology: It is the study of living organisms is relative to other organism and their environment.
14. Genetics: It is the study of inheritance of characters or heredity and variations.
15. Evolution: It is the study of the origin of life as well as new types of organism from the previous ones by modifications involving genetic changes and adaptations.
16. Paleontology: It deals with the study of fossils or remains and impressions of past organisms.
17. Virology: It is the study of viruses and all their aspects.

5. Linkage of Biology with Other Field Of Study Biology constitutes the relation with every aspect of human and every sciences. The study of biology needs experiences of almost all the branches of science including chemistry, physics, sociology, geology, climatology etc. The linkage of biology and other sciences are mentioned below:

- 5.1. Biochemistry Biological processes of living organisms depend upon the interactions of the atoms, molecules and compounds that make up living tissues and the environment in which life takes place e.g. Photosynthesis, Respiration and Digestion.
- 5.2. Biophysics Biophysics studies life at every level, from atoms and molecules to cells, organisms and environments e.g. photosynthesis. Physics used in Physiology, Bioenergetics, Neurosciences, Pharmacology etc.
- 5.3. Biogeography It is the study of the distribution of species and ecosystems in geographic space and through geological time. Organisms and biological societies often vary in a regular fashion along geographic gradients of latitude, elevation, isolation and habitat area e.g. polar bears live in arctic region.
- 5.4. Biostatistics

The study of biology focuses on living organisms, statistical analyses provide vital awareness into numerous biological procedures. Basic statistical ideas help biologists properly formulate experiments, confirm conclusions and correctly interpret results. 5.6. Bio-economics

Bio-economics is an advanced branch of social science that seeks to assimilate the disciplines of economics and biology for the sole determination of creating theories that do a better job of explaining economic events using a biological basis and vice versa. 6. Careers in Biology

Careers with a biology which fall under this concern contain marine and aquatic biologist, zoo biologist, conservation biologist, ecologist and environmental manager. Biologists in these roles carry out recovery programs for endangered species and provide education for the general public. 6.1. Medicines or Surgery Medicine is the field of health and healing. It comprises nurses, doctors and various authorities. It covers diagnosis, treatment and prevention of disease, medical research and various other aspects of health. Medicine aims to endorse and maintain health and wellbeing. 6.2. Fisheries Maintainable, productive fisheries, aquaculture improve food and nutrition security increase income and improve livelihoods, promote economic growth and protect our environment and natural resources. Small scale aquaculture is particularly significant for conference the world growing petition for fish 6.3.

Agricultures It is a field area of land, enclosed or otherwise used for agricultural purposes such as cultivating crops or as a paddock or other enclosure for livestock. A field may also be an area left to lie fallow or as arable land. 6.4. Animal Sciences Professional education in animal science prepares students for career opportunities in areas such as animal breeding, food, fiber production, nutrition, animal farming, animal behavior and welfare. 6.5. Horticultures Horticulture is the science and art of the development, sustainable production, marketing and use of high value intensively cultivated food and ornamental plants. Horticultural crops are varied they contain annual and perennial species, pleasant fruits and vegetables and ornamental interior and landscape plants. 6.6. Forestry

Forestry is the science, practice of studying managing, forests and plantations and related natural resources. Silvi-culture a related science, involves the growing and tending of trees and forests. Industrial foresters are mainly involved in planning the timber harvests and forest regeneration.