GENERAL SCIENCE: BIOLOGY

WHAT IS BIOLOGY?

The science which deals with the study of living objects and their life processes is called biology (Greek words, bios – life, logos – study). It covers all aspect of the study of living creatures like occurrence, classification, ecology, economic importance, external form, organization, internal structure, nutrition, health and other body functions, reproduction, life history, inheritance and origin. Being broad – based and multi- disciplinary, the term biology is often replaced by the term life sciences or biological sciences. Aristotle is known as the ‘Father of biology’. The term biology was coined by Lamarck.

There are three major branches of biology – botany, zoology and microbiology. Botany is the branch of biology which deals with the study of different aspects of plants. Theophrastus is known as the father of Botany. Zoology is the branch of biology connected with the study of different aspects of animals. Aristotle is known as the father of Zoology. Microbiology is the branch of biology dealing with the study of different aspects of microorganism. Leeuwenhoek is known as the father of Microbiology.

MAIN BRANCHES OF BIOLOGY

Some of the main branches of biology are briefly discussed below:

1. Taxonomy: It is the science of identification, nomenclature and classification of organisms.

2. Morphology: It is the study of external form, size, shape, colour, structure and relative position of various living organ of living beings.

3. Anatomy: It is the study of internal structure which can be observed with unaided eye after dissection.

4. Histology: It is the study of tissue organization and structure as observed through light microscope.

5. Cytology: It is the study of form and structure of cells including the behavior of nucleus and other organelles

6. Cell Biology: It is the study of morphological, organizational, biochemical, physiological, genetic, developmental, pathological and evolutionary aspects of cell and its components.

7. Molecular Biology: It is the study of the nature, physicochemical organization, synthesis working and interaction of bio-molecules that bring about and control various activities of the protoplasm.

8. Physiology: It is the study of different types of body functions and processes.

9. Embryology: It is the study of fertilization, growth, division and differentiation of the zygote into embryo or early development of living beings before the attainment of structure and size of the offspring.

10. Ecology: It is the study of living organisms is relation to other organism and their environment.

11. Genetics: It is the study of inheritance of characters or heredity and variations. Heredity is the study of expression and transmission of traits from parents to offspring.

12. Eugenics: It is the science which deals with factors related to improvement or impairment of race, especially that of human beings.

13. Evolution: It studies the origin of life as well as new types of organism from the previous ones by modifications involving genetic changes and adaptations.

14. Palaeontology: It deals with the study of fossils or remains and impressions of past organisms present in the rocks of different ages.

15. Exobiology: It is the branch of scientific inquiry dealing with the possibility of life in the outer space.

16. Virology: It is the study of viruses in all their aspects.