

Q1. Define Science.

Science is knowledge which is obtained through observation and experimentation to understand the principles of nature.

Q2. Why is science divided into various disciplines?

Ans: With the passage of time knowledge of science is increasing rapidly .So Science is divided into various disciplines to ease the study .

Q3. Define Biology.

Ans: Scientific study of life is called biology. The word biology is derived from two Greek words Bios mean life and logos means reasoning.

Q4. Define Molecular biology.

Ans: Molecular biology is the study of Molecules of life like water, proteins, carbohydrates and nucleic acid.

Q5. What are parasites?

Ans: Parasites are organisms which obtained their nutrition from their host and harm them

Q6. What are the major biological issues of the present age?

Ans: Rapid increase in human population, Epidemics, Environmental pollution are the major biological issues of the present age.

Q7. What is meant by horticulture? How is it related to agriculture?

Ans: It deals with the art of gardening. A horticulturist works for the betterment of existing varieties and for the production of new varieties of ornamental plants and fruit plants. Gardening, and increasing the crops production are also studied in Agriculture. So, we can say Horticulture is a discipline of Agriculture.

Q8.What is meant by Biotechnology?

Ans: It deals with the practical application of living organisms to make substances for the welfare of mankind.

Q9. Write a note of Jabir Bin Hayan.

Ans: He was born in Iran and practiced medicine in Iraq. He introduced experimental investigation in chemistry and also wrote a number of books on plants and animals. His famous books are “Al-Nabatat” and “Al-Haywan”.

Q.10 Write a note on services of Abdul Malik Asmai.

Ans: He is considered the first Muslim scientist who studied animals in detail. His famous writings include “Al-Abil(camel), “Al-Khail (horse)”, Al-Whoosh(animals)”, and “ Kalq al -ansan”.

Q11. Define bio elements.

Ans: Out of the 92 kinds of elements that occur in nature, 16 are called bio elements. These take part in making of the body mass of living organisms.

Q12. Write name of those bio elements which make the 99% of human body mass.

Ans: O, C, H, N, Ca and P

Q13. Define Molecule.

Ans: Molecule is the representative part of a compound carrying all characteristics of that compound.

Q14. What is meant by Molecular level?

Ans: In this level we study organisms at molecular level.

Q15. Differentiate between Macro and Micro Molecules.

Ans: Small molecules having less molecular weight are called Micro Molecules. i.e., Glucose and water etc

Large molecules having large molecular weight are called Macro Molecules', Starch, Proteins and Lipids etc.

Q16. What are cell organelles? Name few cell organelles.

Ans: Bio molecules are combined in a particular way to form the cell organelles. Cell organelles are sub cellular structure and specialized for a specific work in the cell.

Name of cell organelles: Mitochondria, Ribosomes, Golgi bodies etc.

Q17. Define Cell.

Ans: Cell is the structural and functional unit of living organisms. Cell arises from the division of pre existing cells.

Q18: Define Tissue.

Ans: In multicellular organisms cells having related function organized in the form of groups. These groups of cell are called tissue. i.e., Glandular tissues, xylem tissue etc.

Q19: Define organ.

Ans: In higher level multicellular organisms , tissues having related functions are organized to form organ. In an organ every tissue does its work and this becomes the work of organ. i.e., Stomach is an organ specialized for the digestion of proteins and storage of food.

Q20: Name some tissues found in plants and animals.

Ans:

Animal tissues: Nervous tissue, Muscular tissue and Epithelial tissue etc.

Plant tissues: Epidermal tissues, Ground tissues, Vascular tissues etc.

Q21: Define organ system.

Ans: Organs having related functions organized together to form organ system. In an organ system every organ performs its specific function.

And work of all organs combined becomes the function of the organ system. i.e., Digestive system

Q22: Define organism.

Ans: Different organ system combined in a co ordination and form organism. In an organism all the activates are well coordinated.

Q23: Define species.

Ans: A group of organisms which can interbreed to produce fertile offspring is called species. i.e., all human beings are belong to one species. Sapiens

Q24: Define population.

Ans: A population is defined as a group of organisms of the same species located at the same place, in same time. For example, human population in Pakistan in 2010 comprises of 173.5 million individuals.

Q25. Define Habitat.

Ans: Habitat is a place where an organism lives. For example a tree can be a habitat of a bird.

Q26: Define community level.

Ans: Assemblage of different populations, interacting with one another within the same environment. For example a forest is a community.

Q27: What is meant by biosphere?

Ans: Part of earth inhabited by organisms' communities is known as biosphere. It constitutes all ecosystems.

Q28: Define Ecosystem.

Ans: An Area where living organisms interact with nonliving component of the environment.

Q29: Define Unicellular Organization.

Ans: In unicellular organization only one cell makes the life of an organisms. All the life activities are carried out by the only cell. Amoeba, Paramecium and Euglena are common examples.

Q30: What is colonial Organization?

Ans: In Colonial type of cellular organization, many unicellular organisms live together but do not have any division of labor among them. Volvox is a green alga found in water that shows colonial organization. Hundreds of Volvox cells make a colony.

Q31. What is meant by multicellular organization?

Ans: In multicellular organization, cells are organized in the form of tissues, organs and organ systems. Frog and Mustard are the familiar examples of multicellular organization.

Q32: Write down the scientific name of frog and Mustard plant.

Ans: Scientific Name of Frog: *Rana tigrina*

Scientific name of Mustard Plant: *Brassica campestris*

Q33: Define Morphology.

Ans: This branch deals with the study of form and structure of living organisms.

Q34: Define Anatomy.

Ans: The study of internal structures is called anatomy.

Q35: Define Histology.

Ans: This branch of biology deals with the microscopic study of tissue.

Q36: Define Cell biology.

Ans: The study of the structures and function of cell and cell organelles is called cell biology. This branch also deals with the study of cell division.

Q37: Define Physiology.

Ans: This branch deals with the study of the functions of different parts of living organisms.

Q38: Define Genetics.

Ans: The study of genes and their roles in inheritance is called genetics. Inheritance means the transmission of character from one generation to the other.

Q39: Define Embryology.

Ans: It is the study of the development of an embryo to new individual.

Q40: Define Taxonomy.

Ans: It is the study of the naming and classification of organisms into groups and subgroups.

Q41: Define paleontology.

Ans: It is the study of fossils, which are the remains of extinct organisms.

Q42: What is Environmental biology?

Ans: This branch of biology deals with the study of interactions between the organisms and their environment.

Q43: Define Socio-biology.

Ans: This branch deals with the study of social behavior of the animal that make societies.

Q44: Define parasitology.

Ans: The branch of biology deals with the study of parasites.

Q45: Define Immunology.

Ans: It is the study of immune system of animals, which defends the body against invading microbes.

Q46: Define Entomology.

Ans: It is the study of insects.

Q47: Define Pharmacology.

Ans: It is the study of drugs and their effects on the systems of human body.

Q48: Define Biophysics.

Ans: It deals with the study of principles of physics, which are applicable to biological phenomena. For example there is a similarity between the working principles of lever in physics and limbs of animals in biology.

Q49: Define Biochemistry.

Ans: It deals with the study of the chemistry of different compounds and processes occurring in living organisms.

Q50: Define Biometry/Biomathematics.

Ans: It deals with the study of biological processes using mathematical techniques and tools.

Q51: Define Biogeography.

Ans: It deals with the study of the occurrence and distribution of different species of living organisms in different geographical regions of the world.

Q52: Define bioeconomic.

Ans: It deals with the study of organisms for economical point of view. For example the cost value and profit value of the yield of wheat can be calculated through bioeconomic and benefits or losses can be determined.