Manika Thapa

Assignment 1

1. Write a paragraph introducing yourself, including which year you are in. Your major? Why do you want to study the Bio111 class? What are your expectations from this class?

My introduction:

My name is Manika Thapa, but you can call me Modika. I am a freshman studying Biology, and my major is Nursing. I chose to take BIO111 because I want to learn how the body, cells, and tissues work. I also believe this class will help me build a strong foundation for my future nursing courses and guide me in understanding the basic concepts of biology

1. Go through the terminologies in the table one by one, write down a brief note on each one of them(examples would look more convincing)

Brief Notes on Basic Terminologies

Zoology - Zoology refers to that branch of biology that deals with animals, their structure, classification, behaviour and evolution.

Habitat: Land, water, air.

Example: Study of lions in grasslands or dolphins in seas.

Botany - Botany is that which concerns itself with the scientific investigation of plants, their structure, growth, reproduction, and classification.

Habitat: Forests, deserts, aquatic areas.

Example: Study of lotus plants in ponds or cactus in deserts.

Microbiology - Microbiology is the study of microscopic life, i.e. bacteria, viruses, fungi and protozoa that cannot be viewed by the naked eye.

Habitat: Soil, water, human body, extreme environments.

Example: The study of E. coli bacteria or yeast that are used in bread making.

Basic Science - Basic science of science aims at developing basic knowledge and the comprehension of natural phenomena without any practical purpose in the nearest future.

Example: Atomic structure or genetic coding research.

Applied Science - Applied science is applied science that applies scientific principles to tackle common issues and create workable technology.

Example: Production of vaccines, production of smartphones.

Biochemistry - Biochemistry is the science of chemical reactions and compounds that are found in living things.

Example: Plant photosynthesis or human digestion.

Ecosystem - An ecosystem comprises of living things that affect each other and their physical surroundings.

Habitat: Forests, deserts, oceans, wetlands.

Example: The Amazon rainforest ecosystem.

Eukaryote - Eukaryotes include the organisms that have cells that have a nucleus and are surrounded by organelles.

Habitat: Land, water, and air habitats.

Example: Human beings, plants, and fungi.

Prokaryote - Prokaryotes are single celled organisms that contain no nucleus but have membrane enclosed organelles.

Habitat: Soil, water, hot springs, extreme habitats.

Example: Bacteria and cyanobacteria.

Scientific Methods - Scientific methods refer to the systematic procedures in studying phenomena, including the following: observation, hypothesis, experimentation, and conclusion.

Example: Experimenting with the effect of sunlight on the growth of plants.

Inductive Reasoning - Inductive reasoning is general reasoning derived through a set of observations or a pattern.

Example: When one looks at a bunch of green apples - one concludes that all apples are green.

Deductive Reasoning - Deductive reasoning involves the use of general rules in order to come up with a specific conclusion.

E.g. Every mammal has lungs - A tiger has lungs.

Hypothesis - Hypothesis is an informed conjecture or testable explanation of a phenomenon on the basis of limited evidence, which determines subsequent experiments.

Illustration: "Plants will grow better when watered on a daily basis.

Life Science - Life science is concerned with living objects and life processes such as biology, botany, zoology and ecology.

Example: Learning about the work of the human heart.

Physical Science - Physical science is non-living and studies such topics as physics, chemistry, and geology.

Example: Learning of metallic character or chemical reactions.

1. Can you think of or have heard of other branches of biology(which are not mentioned in the table)?

Other Biological Specialties (which are not mentioned in the Table)

Genetics - The science of genes and DNA and the inheritance of characteristics between parents and offspring.

You know how eyes get color.

Anatomy - The study of the structure and parts of living organisms.

Example: Knowing about human organs such as the heart and the lungs.

Physiology- The science of the functions of the organs and systems in living things.

Example: The digestive system. How does it break food down.

Ecology - The study of how living things interact with each other and their environment.

Example: Research on how plants, animals and insects rely on each other in a forest.

Embryology - The study of the development of an embryo from fertilization to birth.

example: You can see the development of a chick in a chicken egg.

Paleontology - The study of ancient life forms through fossils.

Problem: Fossil records of dinosaurs.

Molecular Biology - The study of biological processes at the molecular level, especially DNA and proteins.

Example: The study of the role of genes in managing cells.

Immunology - The science of the immune system and the mechanism of defence by the body.

Example: Understanding how vaccines work.

Pathology - The study of diseases, their causes, and effects on the body.

Case: How do bacteria cause infections.

Entomology - The branch of biology that studies insects.

Scenario: The research of behaviour of honeybees and their part in pollination.

Marine Biology - The discipline that examines life forms on the oceans and seas, plants and animals.

Example: Study of coral reefs and marine fish.

Evolutionary Biology- The science of the development and change of living beings through evolution.

Examples: The evolution of people as primates.

Biotechnology- The practical application of life and technology to make useful products.

Case in point: Making insulin with genetically modified bacteria.