

AGRICULTURAL SCIENCE ASSIGNMENT
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1. **Irrigation.**

Irrigation is the artificial application of water to the soil through various systems of tubes, pumps and spray. Irrigation is usually used in areas where rainfall is irregular or dry times or drought is expected.

1b. **Types of Irrigation**

- a. **Surface Drainage System.** Surface drainage system removes excess water from the land's surface through channels or ditches.
- b. **Sub-Surface Drainage System.** Sub-Surface Drainage System are implemented beneath the top layer of soil.
- c. **Slope Drainage System.** These are built to allow water flow from a structure in a downward direction, it is done with the aid of pipes that move down through the slope.
- d. **Downspouts and Gutter System.** They are structure of first defence against oversaturation from stormwater, they are often drained into an aluminium extension, buried drainpipe, rain barrel or other solution.

2. **Animal Improvement.**

- a. **Introduction.** Introduction is a method of animal improvement which consist of bringing into the farm or country high quality breeds of livestock with a high productive capacity and other good desirable characteristics from another country.
- b. **Breeding.** Can be explained as the selective crossing of domestic animals that have desirable qualities resulting in improved offspring.

2b. **Classification of Fishes**

- a. **Superclass Agnatha Chondrichthyes (Jawless Fishes).** These are the most primitive of all the classification of fish, the fish in this group have no jaws, their mouth are like holes in their heads without movable parts. Example: Lampreys.
- b. **Class Chondrichthyes (Cartilaginous Fishes).** These group of fishes has jaws and also have upper and lower jaws made of cartilage. Example: sharks.

c. **Superclass Osteichthyes (Bony Fishes)**. The fishes in this group are known to be bony in nature, and divided into two namely;

1. **Sarcopterygii** Example is Lungfish

2. **Actinopterygii** Example is Gars

3.

Serial	Disease	Animal Affected	Casual Organism	Mode of Transmission	Symptoms	Control Measure	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Anthrax	Cattle and Sheep	Bacillus anthracis	Inhaling spores	Presence of blood on mouth and nose of infected animal	Dispose of anthrax carcasses properly	
2	Ringworm	Cattle and Goat	Trichophyton	Coming in contact with infected animal	Areas in the body having hair loss with red	Keep infected animal in isolation	

4. **Economic Importance of Animal Disease**

Animal diseases have significant economic importance, as they can impact various aspects of the global economy, including agriculture, trade, and public health. These impacts as highlighted below are crucial for developing effective strategies to prevent, control, and manage animal diseases, ultimately safeguarding the global economy and public health.

a. **Agriculture**. Animal diseases results in a loss of livestock and a decrease in agricultural productivity with negative impact on the income of farmers and the overall economy of nation. Similarly, the control and eradication efforts could be cost effective which further strain the agricultural sector.

b. **Trade**. Animal diseases affects local and global trade in farm products which include animal and animal products such as meat, dairy, and eggs. When an animal disease outbreak occurs, it can lead to trade restrictions and disruptions, negatively affecting the export and import of these products.

c. **Public Health.** Animal diseases such as avian influenza, can have the potential to cross species barriers and infect humans, posing a serious threat to public health. The economic importance of these diseases lies in the costs associated with disease prevention, control, and treatment.

d. **Research and Development.** Animal diseases can also encourage research and development effort in seeking to find control and preventive measures by relevant institutions and organisations.

4b. **Mendel's first law of segregation**

States that: The two copies of each genetic factor segregates during the development of gametes, to ensure that each parent's offspring attains one factor

5. **Short Notes on Terminologies:**

a. Gametes: Reproductive cells, including sperm (male) and egg (female), involved in sexual reproduction and genetic transmission.

b. Chromosomes: Cellular structures containing DNA, genes, and genetic information responsible for inheritance, development, and biological functions.

c. School: Educational institution providing formal learning, instruction, training, and development for students to acquire knowledge, skills, and competencies.

d. Fry: Juvenile fish stage following hatching, characterized by small size, vulnerability, and dependency on suitable habitat, food, and environmental conditions.

e. Gears: Mechanical components or devices with interlocking teeth, cogs, or elements used to transmit, transfer, or modify motion, force, speed, and torque in machinery, equipment, and systems.

f. Fingerlings: Young fish stage following fry, characterized by increased size, development, and suitability for stocking, rearing, and production in aquaculture systems.

g. Aquarium: Enclosed habitat, container, or facility containing aquatic organisms, plants, and ecosystems for observation, research, education, display, and conservation purposes.

- h. Heterozygous: Genetic condition or state characterized by different alleles or gene variants at specific genetic loci or positions, influencing traits, characteristics, and inheritance patterns.
- i. Hybrid: Offspring resulting from the crossbreeding or mating of individuals from different species, breeds, or populations, exhibiting characteristics, traits, and combinations of parental traits.
- j. Genotype: Genetic makeup, constitution, or profile of an organism, including alleles, genes, and genetic information influencing traits, characteristics, and biological functions.