



SECOND TERM E-LEARNING NOTE

SUBJECT: BIOLOGY

CLASS: SS 1

SCHEME OF WORK

WEEK TOPIC

1. Reproduction (Meaning, Types and Form of Asexual Reproduction)
2. Sexual Reproduction (Conjugation, Meiosis) and Excretory Organelles in Living Cells
3. Reproduction in Unicellular Organisms and Invertebrates
4. Irritability and Movement
5. Nutrition in Animals (Food Substances and Digestive Enzymes)
6. Basic Ecological Concepts
7. Biomes
8. Population Studies
9. Functioning Ecosystem
10. Ecological Management
11. Revision and Examination

REFERENCES

- Modern Biology for Senior Secondary Schools by S.T. Ramlingam
- Essential Biology by M.C Michael
- New Biology by H. Stone and Cozen
- SSCE, past questions and answers
- New System Biology by Lam and Kwan
- College Biology by Idodo Umeh
- UTME, SSCE and CAMBRIDGE past questions and answers
- Biology practical text

WEEK ONE

DATE

TOPIC: REPRODUCTION

CONTENT

- Meaning and Types of Reproduction
- Forms of Asexual Reproduction
- Sexual Reproduction (Conjugation and Fusion of Gametes)
- Meiosis and Importance of Meiosis

MEANING AND TYPES OF REPRODUCTION

Reproduction is the ability of an organism to give rise to new individuals of the same species in order to ensure continuity of life.

There are two types of reproduction



- a. asexual reproduction
- b. sexual reproduction
 - a. **Asexual Reproduction:** is the process whereby an organism produces an offspring by itself. I.e. only one parent is present. No gametes involved thus there is no fusion of nuclei, but the cells that give rise to the offspring usually divide by means of mitosis. Offspring produced are identical to the parent in all respects and are called clones
 - b. **Sexual Reproduction:** is a type of reproduction that involves two parents and the fusion of the male and the female gamete to form a zygote. Offspring produced show new variation. The sex cells (gametes) are produced by meiotic cell division and after fertilization the new individual continues to grow and produce new cells by mitosis.

EVALUATION

1. What is reproduction?
2. Why is reproduction necessary?
3. Differentiate between the two types of reproduction.

FORMS OF ASEXUAL REPRODUCTION

- a. **Binary Fission:** *Fission* is the simplest form and involves the division of a single organism into two complete organisms, each identical to the other and to the parent. Fission is common among unicellular organisms such as bacteria, many protists and some algae.
- b. **Budding:** The parent organism develops an outgrowth which subsequently forms the new individual organism. These buds break off from the parent without causing any injury and live an independent life. Budding is common in yeast and hydra
- c. **Spore Formation:** Spores are DNA-containing capsules capable of sprouting into new organisms; unlike most seeds, spores are produced without sexual union of gametes, when dispersed, each spore is capable of developing into a new organism. Spores are common in lower organisms especially fungi such as rhizopus and penicillium.
- d. **Fragmentation:** A part of the parent organism breaks up and develops into a new independent organism. This type of reproduction is also called regeneration. Fragmentation is common in spirogyra and coelenterates.
- e. **Vegetative Propagation:** It occurs in higher plants. In this process, a new plant grows from any portion of an old one other than the seeds. There are two methods of vegetative propagation, this includes natural and artificial vegetative propagations.
Natural vegetative propagation involves the use of...