



**BIOLOGY TEST PROGRAMME FOR THE ACCESS AND ADMISSION TO HIGHER EDUCATION  
FOR OVER 23 YEARS OLD, AT UFP**

**Syllabus:**

1. Biosphere diversity
  - 1.1. Biosphere
    - 1.1.1. Diversity.
    - 1.1.2. Organization.
    - 1.1.3. Extinction and conservation
  - 1.2. The Cell
    - 1.2.1. Structural and functional unit
    - 1.2.2. Basic constituents
2. Obtaining the matter
  - 2.1. Obtaining matter by heterotrophic beings
    - 2.1.1. Unicellular vs multicellular
    - 2.1.2. Ingestion, digestion and absorption
  - 2.2. Obtaining matter by autotrophic beings
    - 2.2.1. Photosynthesis
    - 2.2.2. Chemosynthesis
3. Distribution of matter
  - 3.1. Transport in the plants
    - 3.1.1. Transport in the xylem
    - 3.1.2. Transport on the phloem
  - 3.2. Transport in animals
    - 3.2.1. Transport systems
    - 3.2.2. Circulating fluids
4. Transformation of matter into energy
  - 4.1. Fermentation
  - 4.2. Aerobic respiration
  - 4.3. Gas exchange in multicellular beings
    - 4.3.1. In plants
    - 4.3.2. In animals
5. Regulation of the internal environment
  - 5.1. Nerve and hormonal regulation in animals
    - 5.1.1. Thermoregulation
    - 5.1.2. Osmoregulation
  - 5.2. Plant hormones
6. Renovation and growth
  - 6.1. Cell growth and renewal
    - 6.1.1. DNA and protein synthesis
    - 6.1.2. Mitosis
  - 6.2. Tissue growth and regeneration vs cell differentiation
7. Reproduction
  - 7.1. Asexual reproduction
    - 7.1.1. Breeding strategies
  - 7.2. Sexual reproduction
    - 7.2.1. Meiosis and fertilization
    - 7.2.2. Sexual reproduction and variability
  - 7.3. Life cycles, unity and diversity
8. Evolution
  - 8.1. Unicellularity and multicellularity
  - 8.2. Evolution mechanisms
    - 8.2.1. Evolutionism vs fixism
    - 8.2.2. Natural selection, artificial selection and variability
9. Organization and classification
  - 9.1. Classification systems
  - 9.2. Diversity of criteria
  - 9.3. Taxonomy and Nomenclature
  - 9.4. Modified Whittaker classification system



Academia  
Fernando  
Pessoa

**Bibliography:**

Biology: A Global Approach, Neil A. Campbell, Global Edition: Eleventh Edition, Pearson.  
Terra, Universo de Vida - Biologia e Geologia - 10.º Ano

Amparo Dias da Silva, Almira Fernandes Mesquita, Fernanda Gramaxo, Maria Ermelinda Santos, Ludovina Baldaia, José Mário Félix, Porto Editora

Terra, Universo de Vida - Biologia e Geologia - 11.º Ano

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