

Angol-magyar természettudományi szakfordító

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Biológia tételek

1. From DNA to protein: genotype to phenotype. How does information flow from genes to proteins?
2. Protein structure and function; application of restriction enzymes in molecular cloning.
3. Microbial fermentation techniques. The microbiology of anaerobic digestion.
4. Food Biotechnology: Microbiology of fermented foods and beverages
5. The main differences in the public health impact of obesity in industrialized and non-industrialized countries.
6. Australopithecus sediba and its implications for the origins of the genus Homo.
7. Mendel's experiments: "Characters" of different pure lines of pea affecting seed shape and color; flower color and position; pod shape and color; and stem length. F1 progeny and F2 progeny in monohybrid crosses. Mendel's first law. Define genotype and phenotype; dominance and recessiveness.
8. Mendel's experiments: F1 progeny and F2 progeny in dihybrid crosses. Mendel's second law. Explain the cellular basis of Mendel's laws.
9. Describe the characteristics used to classify or categorize viruses! List several important viral diseases of humans! Explain lytic cycle and lysogeny!
10. Compare and contrast the differences among protozoa and fungi! List those protozoa that cause enteral and sexually transmitted diseases! List at least three protozoa that are transmitted by arthropod vectors, name the vectors, describe the ways of infections and the nature of the diseases!
11. Basic principles of the architecture of higher plants.
12. Basic principles of fluorescence, fluorescence in biology and fluorescent microscopy.
13. Fine structure of the eukaryotic cell.
14. The cell cycle and the retinoblastoma protein.

Műszerek:

1. Spectrophotometer
2. MiSeq DNA Sequencer
3. Continuous fermentation system
4. 2D-ELFO
5. Sliding caliper
6. Skinfold caliper
7. DNA sequencing machine, Sanger/capillary sequencing
8. Output of an automatic DNA sequence analysis
9. Anaerob incubator
10. Autoclave
11. Microscope, fluorescent microscope, stereo microscope
12. Aralab FitoClima growth chamber

13. Cryotome
14. Horizontal Laminar Flow Cabinet

Földrajz tételek

1. Environmental problems in Hungary.
2. Describe the urban problems in developing and developed countries.
3. Hydro-conflicts in the Carpathian Basin.
4. Describe the role of climate in karst formation.
5. Examine the problems of living in periglacial environments.
6. Describe the problems and remedies of soil erosion by wind.
7. Assess the likely consequences of a rising sea level during the present century for coastal landforms.
8. How does ice fashion landforms?

ÁBRÁK

1. Hévíz – geologic structure
2. Earthquakes
3. Soil profile
4. Saltation
5. Landforms produced by alpine glaciers
6. El Niño, La Niña
7. FDI inflows
8. UHI

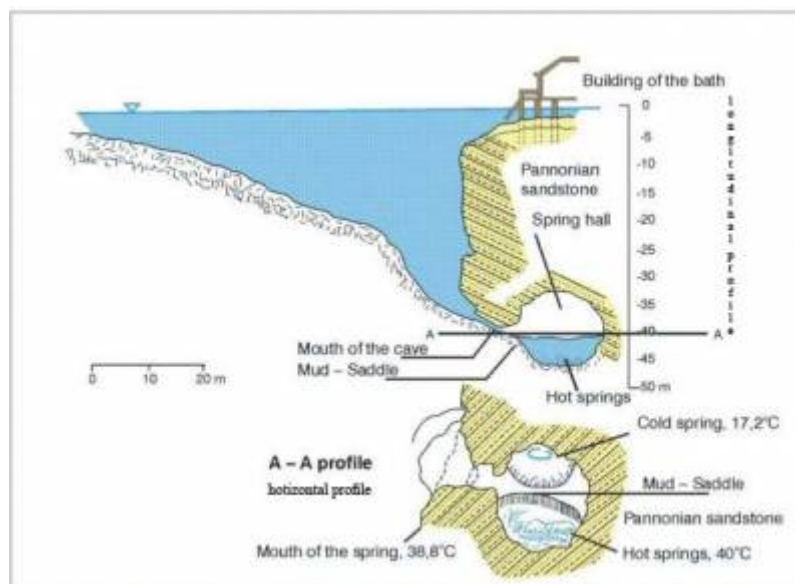


Figure 1.

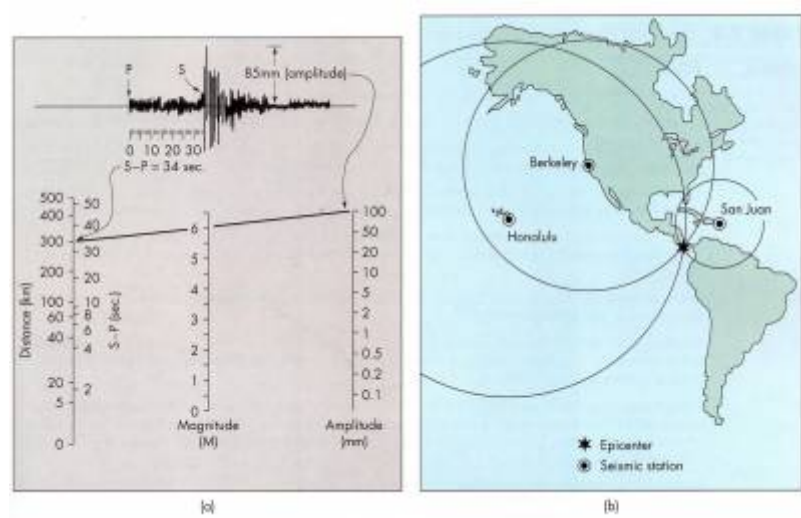


Figure 2.

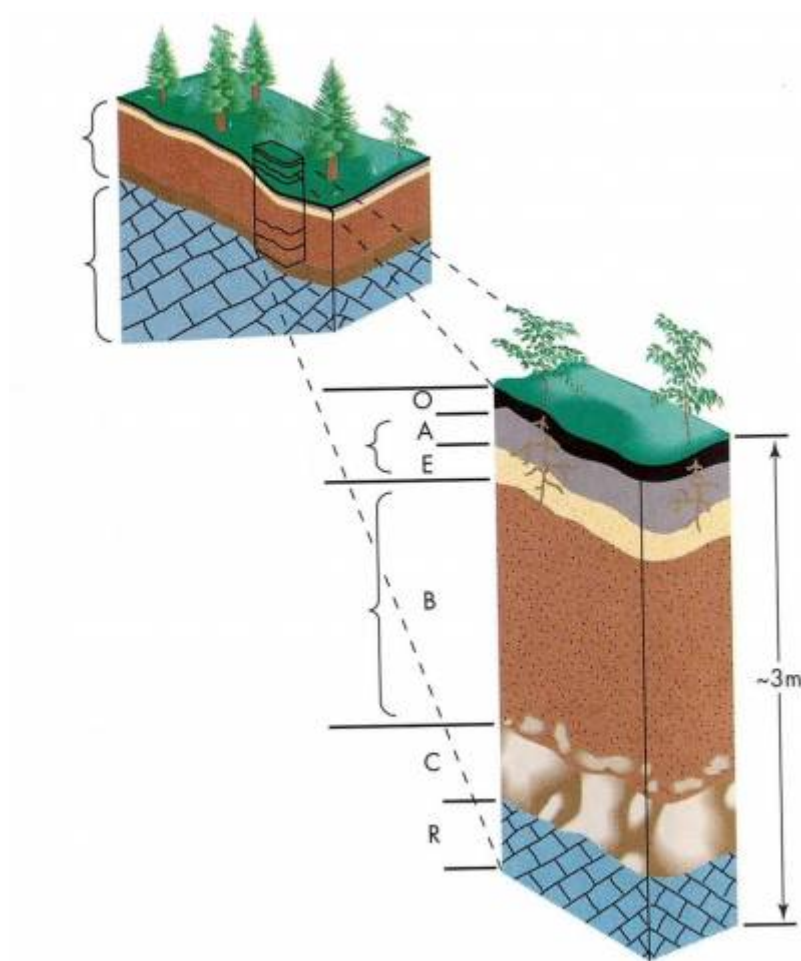


Figure 3.

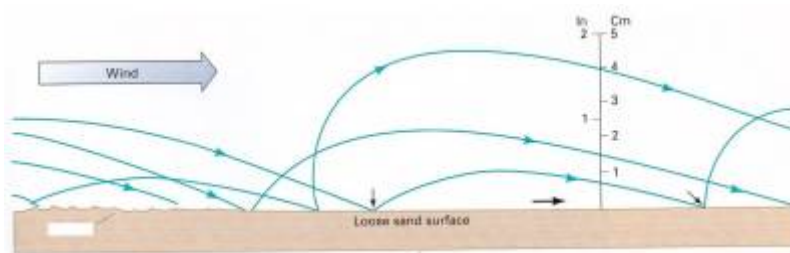


Figure 4.

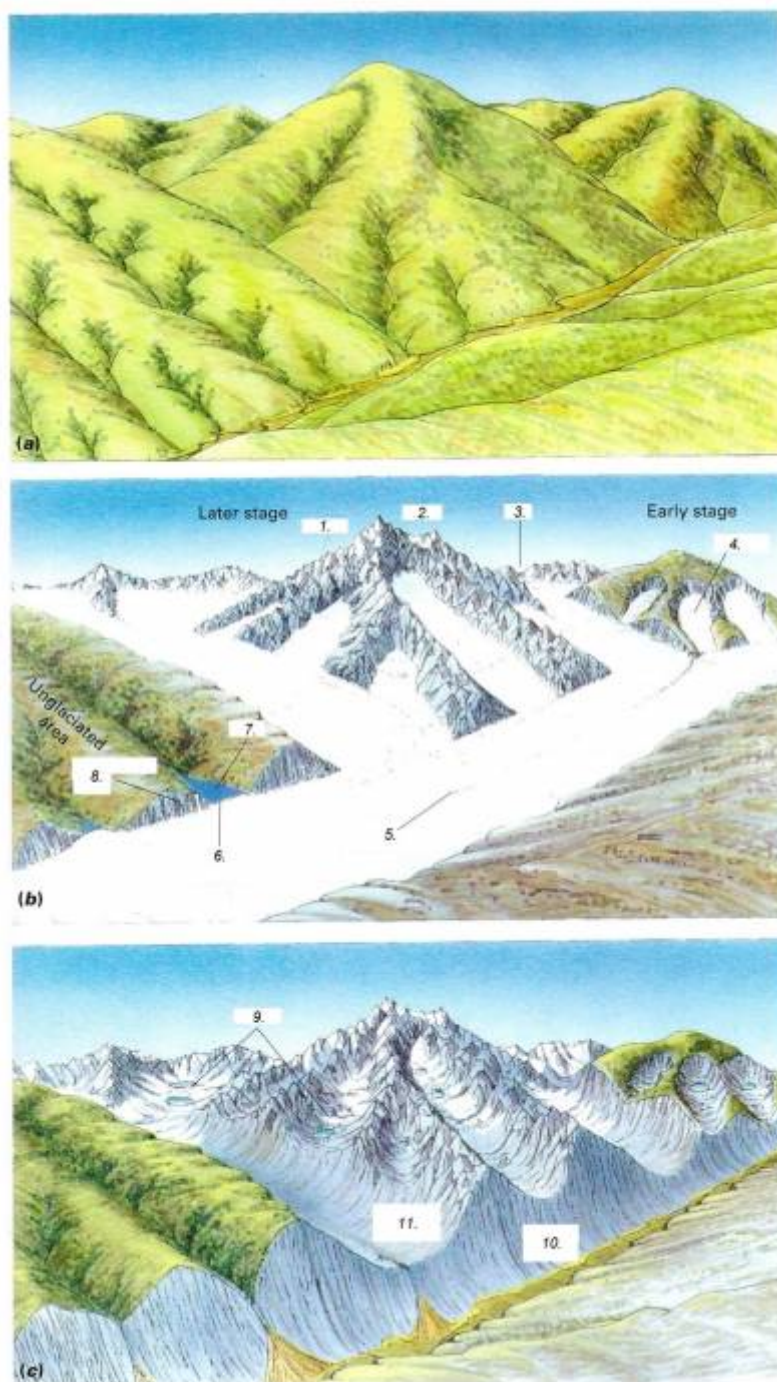


Figure 5.

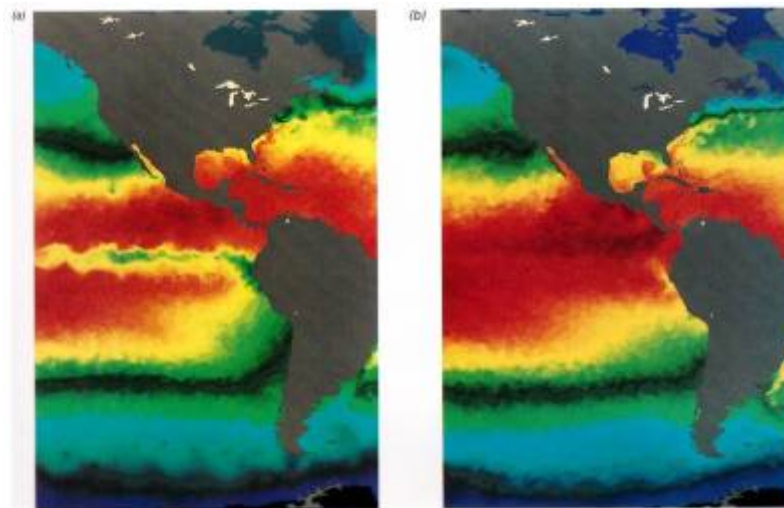


Figure 6.

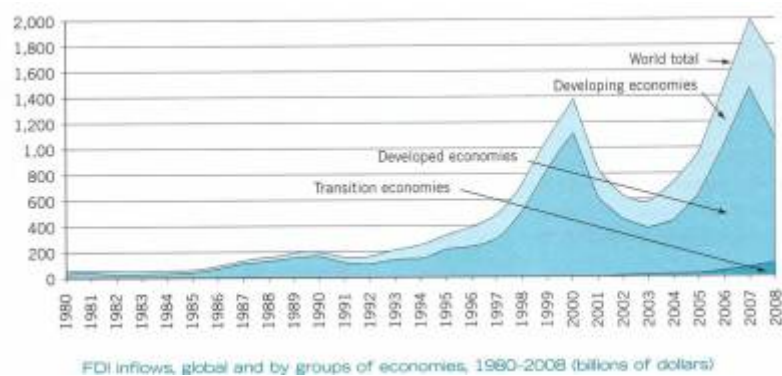


Figure 7.

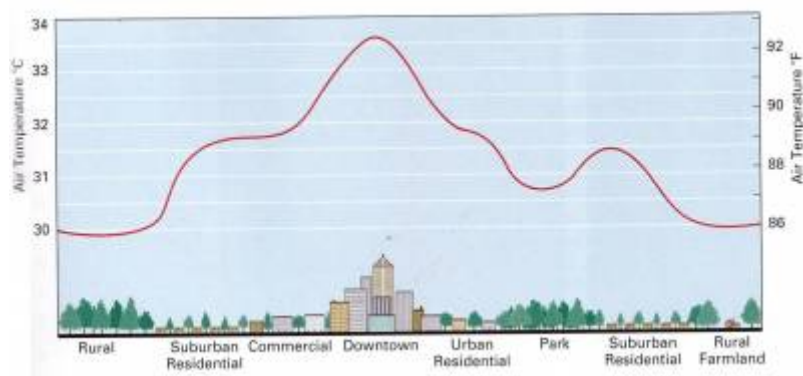


Figure 8.

Kémia tételek

Instruments

1. NMR
2. IR
3. SEM micrograph, elemental map

4. GC-MS
5. Reaction fronts
6. pH meter and electrodes
7. Layered double hydroxides, calcination, delamination, structure reconstruction
8. Synchrotron-based X-ray absorption spectroscopy
9. The mechanisms of Suzuki and Negishi coupling reactions
10. Oil refining
11. Transport processes
12. Alumina production (Bayer process)

Topics

1. Radioactivity
2. Reaction kinetics (types of reaction, kinetic parameters)
3. Catalysis (homogeneous, heterogeneous, phase-transfer)
4. Fundamental operations in chemical technology
5. Types of isomerism
6. The fundamental reaction types in organic chemistry
7. Primary and secondary bonds
8. Crystal field theory
9. Making of polymers
10. Colloid systems
11. The interactions of a material and the electromagnetic wave
12. The laws of thermodynamics and the characteristic of the thermodynamical potential functions

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