



UNIVERSITY OF VETERINARY MEDICINE AND PHARMACY
IN KOSICE, Komenského 73, 041 81 Kosice



PARCOURS MEDECIN, 6 rue de l'Abondance, 69003 Lyon

Admission requirements – BIOLOGY (Academic Year 2018/2019)

1. **The Science of Biology** (History of Biology, Interdisciplinary sciences, Dividing of sciences)
2. **Characteristics of Living Thing** (Basic Life Characteristics – Order, Adaptations, Metabolisms, Movement, Responsiveness, Reproduction, Development, Genes, Evolution)
3. **Classification of living system** (Subcellular organisms – priors, viroids, virusoids, virus – composition, classification, replication cycle; Unicellular organisms, Multicellular organisms)
4. **Cell as the basic unit of life and Cell Structures** (Anatomy of prokaryotic and eukaryotic cell and differences, Cell structures)
5. **The Basic Elements of Organisms** (Organic compounds – Proteins, Nucleic Acids (DNA, RNA), Carbohydrates, Lipids – basic characterization – functions, structure, composition)
6. **Enzymes** (Characterization of enzymes; Mode of action of enzymes – active site, enzyme/substrate complex, lowering of activation energy and enzyme specificity)
7. **Cell Membranes and Transport** (Composition of cell membranes; Movement of substances into or out of cells – passive and active transport – Diffusion, Facilitated diffusion, Osmosis, Endocytosis – definition, types – Phagocytosis, Pinocytosis; Exocytosis, Homeostasis)
8. **Cell Cycle** (Phases of the cycle, Mitosis, Meiosis)
9. **Gene Expression** (Genetic code, Transcription, Translation, Types of RNA)
10. **Harvesting of Energy by Living organisms** (Energy fixation – autotrophs, heterotrophs; Mitochondria and Cellular Respiration, ATP, Photosynthesis and Chloroplasts)
11. **Biological systems** (Circulatory system; Skeletal system; Reproductive system; Digestive system; Urinary system; Respiratory system; Endocrine system; Lymphatic system; Muscular system; Nervous system: collecting, transferring and processing information with brain, spinal cord and peripheral nervous system)
12. **Plant Biology** (Plant Tissues, Plant Growth and Development, Photosynthesis)
13. **Genetics** (Passage of genetic information from parent to offspring, Mendel's Laws, Nature of genes and alleles)
14. **Reproduction and Development** (Cells specialized for reproduction, Fertilization, Development)



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15. **Ecology** (Levels of ecological organization, Energy flow through ecosystems, Interaction in ecosystems – biotic interactions, symbiotic relationship)
16. **Ethology** (Basic characterization of ethology, Instincts, Learning, Key principles and concepts)

EXAMPLE of questions from Biology test:

1. Meiosis results in:
 - a/ two haploid cells
 - b/ two diploid cells
 - c/ four haploid cells
 - d/ four diploid cells

2. The energetic centers of the cell are:
 - a/ plastids
 - b/ vacuoles
 - c/ mitochondria
 - d/ endoplasmic reticulum

3. Translation takes place on