



Sample Topics for Entrance Examinations
Faculty of Veterinary Medicine
University of Warmia and Mazury in Olsztyn

BIOLOGY

1. Describe structure of cell nucleus
2. Characterise organization of cytoplasm in mammalian cells (describe organelles)
3. Describe mitosis
4. Shortly characterise parts of the digestive system in mammals
5. Shortly characterise parts of the respiratory system in mammals
6. Shortly characterise parts of the urinary system in mammals
7. Shortly characterise parts of the female reproductive system in mammals
8. Shortly characterise parts of the male reproductive system in mammals
9. Describe structure and function of the heart in mammals
10. Characterise composition and functions of blood in mammals
11. In mammals, there are several types of glands. Please list them and briefly describe their functions
12. Please list the elements of adaptation of birds to active flight
13. Please describe briefly what is double respiration in birds
14. Briefly describe the function of the placenta
15. Briefly describe the function of the thymus
16. Please list the types of mammalian teeth
17. Name the characteristic that makes mammalian erythrocytes different from bird erythrocytes?
18. Please list the functions of the skin in mammals
19. Please list the function of feathers in birds
20. Please name the difference between an eukaryotic and a prokaryotic cell

CHEMISTRY

1. Basic terminology used in general and organic chemistry
2. The most common elements and functional groups used in organic chemistry
3. Names and symbols of relatively common periodic table elements as well as polyatomic ions
4. Periodic trends in general chemistry – electronegativity, atomic size, ionization energies
5. The Octet rule - Valence electrons and their tendencies to react
6. Acid / Base chemistry - pH, pKa, pKb
7. Common types of reactions in general chemistry
8. Common types of reactions in organic chemistry
9. Reduction / Oxidation reactions
10. Bonding and inter / intra molecular forces
11. Basic physical chemistry – specific heat, spontaneity, Gibbs free energy, endothermic versus exothermic reactions, reaction kinetics