

# BIOLOGY ENTRANCE EXAM – 01

**I. Answer the following questions and mark the correct answers with an (X) in the table below.**

*(max. 15 points)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
a)															
b)															
c)															
d)															

**1. The heart walls are built up of:**

- a) one cell layer
- b) two cell layers
- c) multiple receptors
- d) three cell layers

**2. The highest arterial blood pressure is registered in:**

- a) pulmonary arteries
- b) the aorta
- c) the upper vena cava
- d) the lower vena cava

**3. Trypsin degrades:**

- a) fats to fatty acids and glycerol
- b) carbohydrates to glucose
- c) proteins to amino acids
- d) proteins to nucleotides

**4. The urinary bladder:**

- a) has rigid walls
- b) has elastic walls
- c) is connected directly to the kidneys
- d) produces urine

**5. Vocal cords are located in the :**

- a) pharynx
- b) trachea
- c) larynx
- d) bronchi

**6. The systemic circulation starts from the:**

- a) right ventricle
- b) left ventricle
- c) left atrium
- d) right atrium

**7. Lipids are not entirely dissolved in:**

- a) alcohol
- b) water
- c) acetone
- d) benzol

**8. Polypeptide chains are:**

- a) linear and branched
- b) circular
- c) linear and unbranched
- d) circular and unbranched

**9. Nitrogen bases in DNA are:**

- a) adenine, guanine, cytosine, uracyl
- b) adenine, thymine, guanine, uracyl
- c) adenine, guanine, cytosine, thymine
- d) guanine, cytosine, thymine, uracyl

**10. Phages are viral parasites in:**

- a) plants
- b) bacteria
- c) fungi
- d) animals

**11. Albinism represents a defect in:**

- a) hemoglobin
- b) melanin
- c) keratin
- d) fibrin

**12. Mammals excrete sperm cells only during the process of:**

- a) erection
- b) ejaculation
- c) spermatogenesis
- d) fertilization

**13. The oxidative degradation of organic substances is known as:**

- a) catabolism
- b) metabolism
- c) anabolism
- d) reduction

**14. Double membrane organelles are:**

- a) plastids
- b) flagella
- c) peroxisomes
- d) mitotic spindles

**15. Replication is the synthesis of:**

- a) glycogen
- b) DNA
- c) proteins
- d) ribosomes

**II. Which of the following statements are correct? Mark them with an (X) in the table below.**

(max. 5 points)

1	2	3	4	5	6	7	8	9	10	11	12

1. The tympanic cavity is connected to the throat via the Eustachian tube.
2. Accommodation is a process of adaptation of the eye to color perception.
3. The pancreas is a gland with both external and internal secretion.
4. The epidermis is rich in blood vessels.
5. The nephron participates in filtration, reabsorption and secretion.
6. Amylase is a stomach enzyme that degrades proteins.
7. The basic muscles participating in respiration are the intercostal muscles and the diaphragm.
8. Blood transfusion could be performed with any blood type available.
9. Phagocytosis is the transport of droplets inside the cell.
10. Proteins are dissolved in alcohol to form colloidal solutions.
11. Peroxisomes and ribosomes are DNA containing organelles.
12. The nucleus is divided from the cytoplasm via a double membrane.

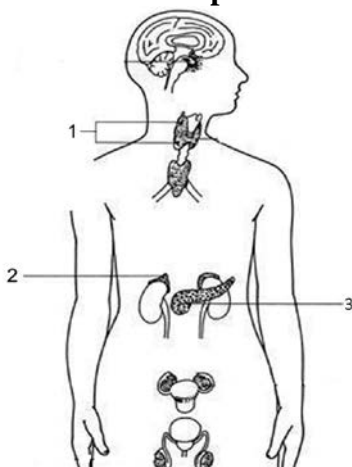
**III. Give a short definition for the following terms:**

(max. 8 points)

1. Hemoglobin.....  
.....
2. Osmosis .....  
.....
3. Fertilization.....  
.....
4. Larynx .....  
.....

**IV. A. Label the parts on the figure.**

(max. 4 points)



1. ....
2. ....
3. ....

**B. What type of organs (regarding their function) are the ones presented?**

.....

**V. Fill in the table:***(max. 8 points)*

	Prokaryotic cell	Eukaryotic cell
Nucleus		
Genetic material - description		
Examples		