

BIOLOGY ENTRANCE EXAM – 05

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)	X					X	X					X			
b)				X					X						
c)		X								X	X			X	X
d)			X		X			X					X		

1. The ear ossicles are located in the:

- a) middle ear
- b) external ear
- c) inner ear
- d) anterior ear

2. The ovaries produce:

- a) testosterone
- b) cortisone
- c) progesterone
- d) growth hormone

3. The main male hormone is:

- a) insulin
- b) estrogen
- c) progesterone
- d) testosterone

4. The thyroid is a:

- a) muscle
- b) gland
- c) joint
- d) ligament

5. The temporal bones are part of the:

- a) rib cage
- b) trunk
- c) limbs
- d) cranium

6. A sphincter is a:

- a) muscle
- b) bone
- c) cartilage
- d) gland

7. Hormones are secreted in:

- a) blood
- b) muscles
- c) saliva
- d) sweat

8. The floating ribs are:

- a) pairs 8, 9 and 10
- b) the first two pairs
- c) pairs 7, 8 and 9
- d) the last two pairs

9. The monomerers of proteins are:

- a) aminoacids
- b) nucleotides
- c) nitrogen bases
- d) monosaccharides

10. The main function of the Golgi complex is:

- a) protein synthesis
- b) lipid synthesis
- c) formation of lysosomes
- d) formation of ribosomes

11. Globular proteins are:

- a) soluble in water
- b) precipitating after denaturation
- c) destroyed after denaturation
- d) positively charged

12. Bacteria are:

- a) organelles
- b) prokaryotic cells
- c) eukaryotic cells
- d) circular chromosomes

8. A person with blood group A has on his erythrocytes:

- a) antigens A and B
- b) antigen B
- c) no antigens
- d) antigen A

14. Catabolic processes:

- a) are reduction processes
- b) are synthetic processes
- c) release energy
- d) produce carbohydrates

15. During metaphase chromosomes:

- a) move to opposite poles of the cell
- b) are decondensed
- c) are aligned along the equator of the cell
- d) are composed of one chromatid

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
	X		X		X		X	X			

1. Chromatin is composed of amino acids and chloroplasts.
2. Adrenalin is produced by the suprarenal glands.
3. The bacterial wall is a lipid structure.
4. Mitochondria and plastids contain DNA.
5. The sclera is a pigmented layer of the eye ball.
6. The energy of the charged membrane of mitochondria and chloroplasts causes the synthesis of ATP.
7. Proteins are produced as a result of transcription.
8. The end products of the Krebs cycle are carbon dioxide, water and ATP.
9. The gene is a portion of DNA responsible for the synthesis of either an RNA or a protein molecule.
10. The codon is a triplet located within a molecule of tRNA.
11. The interphase is characterized by coiling of chromatin fibers.
12. Translation is a process of synthesis of mRNA.

III. Give a short definition for the following terms:

(max. 8 points)

1. Biopolymers.....

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2. Vegetative nervous system.....

.....

3. Chromosome.....

.....

4. Glycolysis

.....

IV. Fill in the table:

(max. 6 points)

	Mitosis	Meiosis
Is typical of which cells?		
Genetic characteristics of the new cells		
Duration, number of phases		

V. A. Label the figure. Which joints and bones are shown?

(max. 6 points)



1.....

2.....

3.....

4.....

B. What types of bones depending on their structure are presented on the figure?

5.....

6.....