PEOPLES´ FRIENDSHIP UNIVERSITY OF RUSSIA NAMED AFTER PATRICE LUMUMBA
RUDN UNIVERSITY
Tests for RUDN University Open Olympiad for Foreign Citizens
BIOLOGY (B)
Variant 1

In the following test select one or more correct answers.

Transfer the response numbers to the response form:

Question	Answer	Question	Answer
1		16	
2		17	
3		18	
4		19	
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Q1: Double membrane-bound organelles include:
A – Golgi apparatus
B – lysosome
C – ribosome
D – mitochondrion
E – endoplasmic reticulum

Q2: The nucleotide complementary to adenine is:
A – cytosine
B – uracil
C – guanine
D – adenine

Q3: Sister chromatids diverge to the cell poles in:
A – prophase of mitosis
B – metaphase I of meiosis
C – telophase of mitosis
D – anaphase I of meiosis
E – anaphase of mitosis

Q4: Antibodies are:
A – cells
B – proteins
C – fats
D – carbohydrates

Q5: The intermediate host of the liver fluke (Fasciola hepatica) is:
A – cow
B – pig
C – mollusk
D – man
E – fish

Q6: Tapeworms dwell in the body of the definitive (final) host in:
A – liver
B – small intestine
C – blood
D – central nervous system

Q7: Cutaneous and pulmonary respiration is typical for representatives of the following class:
A – birds
B – reptiles
C – mammals
D – amphibians
E – fish

Q8: Spherical-shaped bacteria include:
A - cocci
B - bacilli
C - virions
D – spirilla

Q9: Conductive plant tissues include:

A – xylem
B – cambium
C – parenchyma
D – epidermis

Q10: Maintaining the average value of a trait in a population is facilitated by:

A - Driving selection
B - Stabilizing selection
C - Disruptive selection
D - Mutation process

Q11: Plants in biocenoses are:
A - decomposers
B - first order consumers
C - second order consumers
D – producers

Q12: The secondary structure of DNA was discovered by the following scientists:
A – J. Watson
B – H. Krebs
C – G. Mendel
D – F. Crick
E – Th. Morgan

Q13: The stages of gene expression include the synthesis reactions of:
A – ATP
B – RNA
C – glycogen
D – polypeptide
E – DNA

Q14: What is the probability of the formation of gametes with both dominant genes in a diheterozygous organism if it is known that nonallelic genes are completely linked?
A – 100 %
B – 0 %
C – 1 %
D – 10 %
E – 50 %

Q15: When examining feces for parasites, the following pathogen can be detected in the material studied:
A – elephantiasis
B – malaria
C – amoebiasis
D – sleeping sickness
E – ascariasis

Q16: The properties of the genetic code include the following:
A – It is universal.
B – It changes in the process of individual development.
C- It is individual.
D- It is triplet.
E – It is formed by combinations of two nucleotides.

Q17: Match the processes occurring in a eukaryotic cell and their characteristic features:

Processes:
A. Replication
B. Transcription
C. Translation
Characteristic features:
1. It occurs in the cytoplasm.
2. The material for synthesis is ribonucleotides.
3. The material for synthesis is deoxyribonucleotides.
4. The material for synthesis is amino acids.
5. It is carried out according to a semi-conservative principle.
6. DNA polymerase enzyme is involved.
7. It starts at the promoter.

Q18: Determine the correct sequence of gene expression in a eukaryotic cell.

A - mRNA processing.
B - Attachment of two tRNA molecules with amino acids to mRNA.
C - Transcription.
D - Peptide bond formation.
E - Movement of mRNA from the nucleus to the cytoplasm.

1 – CAEBD
2 – ACDEB
3 – EBADC
4 – DAECB
5 – CBDAE
6 – ADEBC

Q19: The genes which control hemophilia and color blindness (recessive traits) are linked to the X chromosome. The frequency of crossing over between the genes is 10%. Which statements are true for a family in which the wife is diheterozygous (she inherited one of the recessive genes from her mother and the second from her father), and the husband is healthy?

A – The wife is healthy.
B – The probability of having a girl with hemophilia is 5%.
C – Only boys can suffer from hemophilia in this family.
D – The probability of having children with color blindness is 25%.
E – The probability of having a boy with hemophilia and color blindness is 2.5%.
F – Healthy children will be born with a 90% probability.
G – All children will have pathology