1. Human immunodeficiency virus (HIV) is
   a) enveloped DNA virus without reverse transcriptase -0
   b) non-enveloped RNA virus with reverse transcriptase -0
   c) enveloped DNA virus with reverse transcriptase -0
   d) enveloped RNA virus with reverse transcriptase +0

2. Highly infective viral or bacterial pathogens are called
   a) opportunistic -0
   b) symbiotic -0
   c) virulent +0
   d) parasitic -0

3. Pinocytosis is
   a) cell uptake of solid particles -0
   b) cell uptake of droplets of extracellular fluid +0
   c) cell excretion of droplets of extracellular fluid -0
   d) cell excretion of particles -0

4. The structure of eukaryotic flagellum contains
   a) proteins called flagellins -0
   b) proteins called lamelins -0
   c) proteins called kinesins -0
   d) proteins called tubulins +0

5. Function of rough endoplasmatic reticulum is
   a) synthesis of lipids -0
   b) synthesis and secretion of proteins and glycoproteins +0
   c) sorting of all proteins in cell -0
   d) sorting and secretion of polysaccharides -0

6. G0 phase of cell life cycle corresponds to
   a) high proliferation phase -0
   b) preparation phase for mitosis -0
   c) synthesis phase, replication of DNA -0
   d) resting phase +0

7. Enzyme Primase is
   a) DNA-dependent DNA polymerase -0
   b) DNA-dependent RNA polymerase +0
   c) RNA-dependent RNA polymerase -0
   d) RNA-dependent DNA polymerase -0

8. Introns are
   a) non-coding regions of primary transcripts +0
   b) coding regions of primary transcripts -0
   c) non-coding regions of mRNAs -0
   d) coding regions of mRNAs -0

9. In Mendel’s experiments the number of gamete types in trihybrid cross:
   a) 2 -0
   b) 4 -0
   c) 6 -0
   d) 8 +0
10. Thomas Hunt Morgan described
   a) independent assortment of chromosomes -0
   b) gene linkage on the chromosome +0
   c) gene regulation in Drosophila melanogaster -0
   d) structure of sex chromosomes -0

11. The phenotype ratio of F2 generation in Mendelian monohybrid cross for the incomplete dominance inheritance is defined as
   a) 1 : 3 -0
   b) 3 : 1 -0
   c) 1 : 1 -0
   d) 1 : 2 : 1 +0

12. The human secondary oocyte, the result of meiosis I, contains
   a) 23 chromosomes and 23 chromatids -0
   b) 23 chromosomes and 46 chromatids +0
   c) 46 chromosomes and 23 chromatids -0
   d) 46 chromosomes and 46 chromatids -0

13. The gene mutation caused by loss of two nucleotides leads to
   a) loss of normal amino acid alignment behind the mutation +0
   b) loss of one amino acid at the protein level -0
   c) loss of two amino acids at the protein level -0
   d) loss of three amino acids at the protein level -0

14. Unbalanced rearrangements of chromosomes DO NOT include
   a) reciprocal translocations +0
   b) isochromosomes -0
   c) deletions -0
   d) duplications -0

15. When there are two alleles on a gene (dominant A and recessive a), then the probability (p) of dominant phenotype is:
   a) pA -0
   b) pAA -0
   c) pAA + pAa +0
   d) pAa -0

16. In the population at equilibrium, on a gene with 2 alleles; the frequency of dominant allele is 60%, the frequency of recessive allele is 40%. What is the frequency of heterozygotes?
   a) 0.50 -0
   b) 0.48 +0
   c) 0.25 -0
   d) 0.24 -0

17. Which sequence of biological formations is from the most complex to the simplest ones?
   a) organ systems – organs – tissues – cells +0
   b) cells – tissues – organs – organ systems -0
   c) organ systems – organisms – tissues – cells -0
   d) organs – organ systems – organisms – tissues -0
18. Animal tissues fall into
   a) three main categories -0
   b) four main categories +0
   c) five main categories -0
   d) six main categories -0

19. Nerve system originates from
   a) mesoderm -0
   b) endoderm -0
   c) ectoderm +0
   d) combined germ layers -0

20. The human heart is composed for
   a) single circulation -0
   b) double circulation with mixed oxygenated and deoxygenated blood -0
   c) double circulation with separated oxygenated and deoxygenated blood +0
   d) quartet circulation with separated oxygenated and deoxygenated blood -0

21. Muscles contraction
   a) requires energy in the form of ATP +0
   b) requires energy in the form of GTP -0
   c) does not require energy -0
   d) requires energy in the form of oxygen -0

22. In the human kidney, the osmotic gradient, that concentrates the urine, is present in
   a) the proximal tubule and the loop of Henle -0
   b) the distal tubule and the collecting duct -0
   c) the proximal and distal tubules -0
   d) the loop of Henle and the collecting duct +0

23. In the testes, nourishment of developing sperm is mediated through
   a) Sertoli cells +0
   b) Cowper’s cells -0
   c) follicular cells -0
   d) Leydig cells -0

24. The hormone glucagon is produce by
   a) anterior pituitary -0
   b) thyroid gland -0
   c) adrenal glands -0
   d) Langerhans islets of pancreas +0

25. In the depolarization phase of the nerve action potential:
   a) Na gates are open +0
   b) Li gates are open -0
   c) Ca gates are open -0
   d) Mn gates are open -0

26. Which event DOES NOT correlate with sympathetic nervous activity?
   a) heartbeat acceleration -0
   b) stimulation of intestinal peristalsis +0
   c) pupil dilatation -0
   d) secretion of adrenalin and noradrenalin -0
27. Osmotic pressure:
   a) a measure of the tendency of a solution to take up glucose when separated from pure water
      by a selectively permeable membrane -0
   b) a measure of the tendency of a solution to take up sodium when separated from pure water
      by a selectively permeable membrane -0
   c) a measure of the tendency of a solution to take up kalium when separated from pure water
      by a selectively permeable membrane -0
   d) a measure of the tendency of a solution to take up water when separated from pure water
      by a selectively permeable membrane +0

28. The cochlea, the organ of hearing, has
   a) the large vestibular and tympanic canals containing endolymph, and the small cochlear duct
      containing perilymph and the Organ of Corti -0
   b) the large vestibular and tympanic canals containing endolymph and the Organ of Corti, and
      the small cochlear duct containing perilymph -0
   c) the large vestibular and tympanic canals containing perilymph, and the small cochlear duct
      containing endolymph and the Organ of Corti +0
   d) the large vestibular and tympanic canals containing perilymph and the Organ of Corti, and
      the small cochlear duct containing endolymph -0

29. Blood plasma contains
   a) 90% water and 10% dry matter +0
   b) 80% water and 20% dry matter -0
   c) 70% water and 30% dry matter -0
   d) 60% water and 40% dry matter -0

30. Water-soluble vitamin:
   a) A -0
   b) E -0
   c) Folic acid +0
   d) K -0