

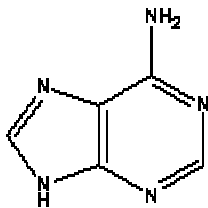
4. X. Acetylcholine receptor an ion channel
Y. Acetylcholine receptor is a transmembrane protein
- a) Only X is correct b) Only Y is correct
c) Both X and Y are correct d) Neither X nor Y is correct
5. X. Coenzymes stabilize tertiary structure of proteins.
Y. Coenzymes are involved in the chemical reactions in the enzymes active center.
- a) Only X is correct b) Only Y is correct
c) Both X and Y are correct d) Neither X nor Y is correct
6. At physiological pH, most of free amino acids are:
- a) Cations b) Anions c) Zwitterions d) None of the above
7. Disulfide bond may be formed between the side chains of
- a) two Met residues (-CH₂-CH₂-CH₂-S-CH₃) b) two Cys residues
c) Cys (-CH₂-SH) and Met residues d) all of the above
8. In globular proteins, nonpolar amino acids predominantly appear
- a) in the protein core b) at the surface of the protein
c) in the interface between subunits d) all of the above
9. Myoglobin
- a) is a fibrous protein b) transports oxygen inside the cells
c) has a quaternary structure d) none of the above
10. Collagen is
- a) a fibrous protein
b) a triple-helix protein
c) a protein with nonstandard amino acids
d) all of the above
11. Complementary base pairing in the double-helix DNA is due to
- a) van der Waals interactions b) hydrogen bonds
c) hydrophobic interactions d) ionic interactions

12. A double-helix DNA molecule has equal numbers of
- a) adenine and thymine residues
 - b) adenine and cytosine residues
 - c) uracil and cytosine residues
 - d) guanine and uracil residues
13. X. Number of different tRNA molecules is equal to number of standard amino acids.
Y. Anticodon of tRNA matches a codon at mRNA.
- a) Only X is correct
 - b) Only Y is correct
 - c) Both X and Y are correct
 - d) Neither X nor Y is correct
14. X. Glucose is a ketose.
Y. Glucose is a pentose.
- a) Only X is correct
 - b) Only Y is correct
 - c) Both X and Y are correct
 - d) Neither X nor Y is correct
15. X. Lipids are components of biomembranes.
Y. Lipids are biopolymers.
- a) Only X is correct
 - b) Only Y is correct
 - c) Both X and Y are correct
 - d) Neither X nor Y is correct
16. X. Enzymes accelerate chemical reactions.
Y. Enzymes lower the activation energy for chemical reactions.
- a) Only X is correct
 - b) Only Y is correct
 - c) Both X and Y are correct
 - d) Neither X nor Y is correct
17. X. Axons transmit electrical signals from the body of neuron to another cell
Y. Axons transmit electrical signals from another cell to the body of neuron
- a) Only X is correct
 - b) Only Y is correct
 - c) Both X and Y are correct
 - d) Neither X nor Y is correct
18. X. Acetylcholine is a neurotransmitter
Y. Acetylcholine is the substrate of acetylcholinesterase
- a) Only X is correct
 - b) Only Y is correct
 - c) Both X and Y are correct
 - d) Neither X nor Y is correct
19. The strongest noncovalent interactions are:
- a) Hydrogen bonds
 - b) Dipole-dipole interactions
 - c) van der Waals interactions
 - d) None of the above

20. A chemical process is spontaneous if:

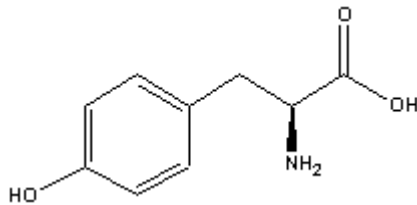
- a) $\Delta H - T\Delta S < 0$ b) $\Delta H + T\Delta S > 0$
c) $\Delta H + T\Delta S < 0$ d) $\Delta H - T\Delta S = 0$

21. The structural formula below represents



- a) Adenine b) Guanine
c) Cytosine d) None of the above

22. The structural formula below represents



- a) Histidine b) Phenylalanine
c) Tryptophan d) None of the above

23. X. Integral membrane proteins do not have ionizable amino acids on their surface.
Y. Peripheral membrane proteins are hydrophilic molecules.

- a) Only X is correct b) Only Y is correct
c) Both X and Y are correct d) Neither X nor Y is correct

24. X. Bungarotoxin blocks nicotinic acetylcholine receptors.
Y. Tetrodotoxin blocks voltage-gated Na^+ channels.

- a) Only X is correct b) Only Y is correct
c) Both X and Y are correct d) Neither X nor Y is correct

THE END

1b, 2d, 3a, 4c, 5b, 6c, 7b, 8a, 9b, 10d, 11b, 12a, 13b, 14d, 15a, 16c, 17a, 18c, 19d, 20a, 21a, 22d, 23b, 24c