

BIOLOGY SAMPLE TEST 1

1. In this type of mutation, one or two nucleotide pairs are inserted into or deleted from DNA:

- A. frameshift mutations
- B. base substitution mutation
- C. missense mutation
- D. nonsens mutation

2. During muscle contraction, which of the following shortens?

- A. Z lines
- B. sarcomere
- C. actin and myosin filaments
- D. all of the above
- E. none of the above

3. Which of the following is part of the appendicular skeleton?

- A. pectoral girdle
- B. pelvic girdle
- C. femur
- D. skull
- E. all of the above are appendicular

4. If a transcribed DNA strand is 5'ATCTGTTAGA 3', then the corresponding sequence of RNA is:

- A. 5' UAGAGTTAGA 3'
- B. 3' TAGACAATCT 5'
- C. 5' UAGACAAUCU 3'
- D. 3' UAGACAAUCU 5'

5. The parasympathetic nervous system has what effect on the heart's pacemaker?

- A. excites it
- B. inhibits it
- C. kills it
- D. has no effect at all
- E. has a variable effect; sometimes excites it, sometimes inhibits it

6. What is the function of the tricuspid valve?

- 1. Prevents the backflow of blood from the right atrium to the right ventricle.
- 2. Prevents the backflow of oxygen-rich blood from the right ventricle to the right atrium.
- 3. Prevents the backflow of carbon dioxide-rich blood from the right ventricle to the right atrium.
- 4. Assure the unidirectional blood flow.

- A. 1. 2. 3. B. 4. C. 2. 4. D. 1. 3. E. 3. 4.

7. The target tissue for luteinizing hormone is the

- A. liver
- B. kidneys
- C. pancreas
- D. thyroid gland
- E. gonads

8. What type of hormones enter their target cells?

- A. steroid hormones
- B. peptide hormones
- C. both of the above
- D. none of the above

9. What can be the genotype of a person of Rh+ blood group?

- A. Homozygous dominant
- B. heterozygous
- C. homozygous recessive
- D. A and B
- E. All of the above

10. When the ribosome moves down the mRNA strand during translation, and amino acids are added one by one to the polypeptide chain, the process is called:

- A. amino acid synthesis
- B. amino acid template translation
- C. elongation
- D. initiation

11. The possible pattern of inheritance of phenylketonuria

- A. dominant-recessive trait, the disorder is caused by a recessive allele
- B. dominant-recessive trait, the disorder is caused by a dominant allele
- C. Incomplete dominant trait, the heterozygous individuals are affected
- D. Incomplete dominant trait, the homozygous individuals are affected

12. What can be the component of a DNA ?

- 1. nucleotides
- 2. nucleoside-diphosphates
- 3. one phosphate – one deoxyribose – thymine
- 4. one phosphate – one deoxyribose – uracil
- 5. one phosphate – one ribose – thymine

A. 1,3. B.1,2,3. C.1,2,4. D.2,3. E. 1.

13. What does cardiac output depends on?

- A. stroke volume
- B. heart rate
- C. temperature
- D. stress
- E. all of the above

14. Which statement is wrong?

- A. Most of the CO₂ is transported in the plasma as bicarbonate ion.
- B. Oxygen binds to hemoglobin in the lungs.
- C. Oxygen-hemoglobin dissociation curve depends on pH.
- D. Some CO₂ diffuses to the capillaries from the alveoli.
- E. Hemoglobin consists of four polypeptide chains.

15. Which statement is wrong?

- A. During expiration the diaphragm relaxes.
- B. During inspiration the diaphragm contracts.
- C. Diaphragm is smooth muscle.
- D. The amount of air moving in and out of the lungs with each normal breath is called the tidal volume.
- E. Some CO₂ also gets to the lungs with inspiration.

16. Each ribosome is composed of:

- A. one large spherical structure in which a groove passes through the middle for reading mRNA
- B. one small subunit and one large subunit that do not join together until translation
- C. two small and one large subunits that become activated when translation is initiated
- D. one small and two large subunits that are activated by mRNA

17. Out of the following vitamins which ones are water soluble?

- 1. Vitamin C
- 2. Vitamin D
- 3. Vitamin B complex
- 4. Vitamin K
- 5. Vitamin A.

A. 1,2,3. B. 1,3. C. 2,4,5. D. 3,4,5. E. 3.

18. Which match is correct for the enzyme and its product?

- 1. Maltase – glucose
- 2. Lipase - glycerol
- 3. Lipase – glycerol and fatty acids
- 4. Pepsin – short polypeptides
- 5. Sucrose – glucose and maltose.

A. 1,2. B. 1,2,4. C. 1,3,4. D. 1,3,5. E. 1, 4.

19. What is true about viruses?

- 1. they are procaryotes
- 2. they need host cells for their reproduction
- 3. Herpes is caused by a virus
- 4. they contain either DNA or RNA as hereditary material
- 5. AIDS is caused by a virus.

A. 1,4,5. B. 2,3,4,5 C. 2,4,5. D. 2,3,4. E. 1,4.

20. Which structures are made from tubulin?

- 1. mitotic spindle
- 2. centrioles
- 3. myofilaments
- 4. ribosomes
- 5. flagella

A. 3,4,5. B. 1,2. C. 1,2,3. D. 1,2,5. E. 1.