

Designer Genes Short Practice Test

1. Which of the following nucleotide pair bonds would be found in a DNA molecule?

- a. adenine-guanine
- b. guanine-cytosine
- c. adenine-cytosine
- d. cytosine-uracil

2. The backbone of a DNA molecule is made of which two components?

- a. phosphate molecules and ribose sugars
- b. deoxyphosphate molecules and ribose sugars
- c. phosphate molecules and deoxyribose sugars
- d. deoxyphosphate molecules and deoxyribose sugars

3. Ribosomes are made of:

- a. rRNA and protein
- b. tRNA and mRNA
- c. rRNA and mRNA
- d. protein and mRNA

4. Watson and Crick were the first to suggest that DNA is:

- a. a short molecule
- b. the shape of a double helix
- c. a protein molecule
- d. protein and tRNA

5. The chromosome abnormality that occurs when part of one chromosome breaks off and is added to a different chromosome is:

- a. deletion
- b. nondisjunction
- c. translocation
- d. inversion

6. Which of the following would be least likely to happen as a result of a mutation in a person's skin cells?

- a. skin cancer
- b. reduced functioning of the skin cell
- c. no change in the functioning of the skin cell
- d. the person's offspring have mutated skin

7. The process by which a DNA molecule is copied is called:

- a. binary fission
- b. mitosis
- c. replication
- d. translation

8. A DNA nucleotide may be made up of a phosphate group along with:

- a. a deoxyribose sugar and uracil
- b. ribose sugar and adenine
- c. deoxyribose sugar and thymine
- d. ribose sugar and cytosine

9. Which series is arranged in order from largest to smallest in size?

- a. chromosome, nucleus, cell, DNA, nucleotide
- b. cell, nucleus, chromosome, DNA, nucleotide
- c. nucleotide, chromosome, cell, DNA, nucleus
- d. cell, nucleotide, nucleus, DNA, chromosome

10. Messenger RNA is formed in the process of:

- a. transcription
- b. translation
- c. replication
- d. mutation

11. X rays, ultraviolet light, and radioactive substances that can change the chemical nature of DNA are classified as:

- a. growth regulators
- b. metamorphic molecules
- c. hydrolytic enzymes
- d. mutagens

12. After DNA replication, the two DNA strands that are produced are:

- a. are complimentary
- b. are identical
- c. must replicate again
- d. cannot replicate again

13. Bacteriophages are:

- a. tiny bacteria
- b. bacteria of the same type
- c. lipids and ribonucleic acids
- d. viruses

14. In translation, the order in which codons bond to mRNA is determined by:

- a. rRNA
- b. tRNA
- c. Base pairing rules
- d. Lagging strand

15. In RNA, the code word AUG that specifies methionine can also serve as a(n):

- a. anticodon
- b. stop codon
- c. initiator codon

d. all are correct

16. The two strands of a DNA double helix are:

- a. identical
- b. purines
- c. pyrimidines
- d. complementary

17. Both DNA and RNA:

- a. contain ribose
- b. are single stranded
- c. contain nucleotides
- d. contain uracil

Answer Key on next page

Answer Key:

1. B
2. C
3. A
4. B
5. C
6. D
7. C
8. C
9. B
10. A
11. D
12. A
13. D
14. C
15. D
16. D
17. C