

# Critical Thinking

## Look-Alikes

In the space provided, write the letter of the term or phrase that best describes how each numbered item looks.

- |                            |                               |
|----------------------------|-------------------------------|
| _____ 1. bacteriophage     | a. a twisted ladder           |
| _____ 2. bacteria capsule  | b. a stick drawing of a house |
| _____ 3. replication fork  | c. a coated pill              |
| _____ 4. deoxyribose sugar | d. a weird spaceship          |
| _____ 5. DNA molecule      | e. the letter Y               |

## Work-Alikes

In the space provided, write the letter of the term or phrase that best describes how each numbered item functions.

- |  |  |
|--|--|
| _____ 6. bacterial transformation                            | a. equal amounts in a recipe                                   |
| _____ 7. DNA polymerase                                      | b. something that causes rope to fray                          |
| _____ 8. ratio of adenine to thymine and cytosine to guanine | c. hypodermic needle injection                                 |
| _____ 9. helicase  | d. a computer spell-check program                              |
| _____ 10. bacteriophage infecting bacteria                   | e. an animal that moves into a den or burrow of another animal |

## Cause and Effect

In the space provided, write the letter of the term or phrase that best matches each cause or effect given below.

- | Cause             | Effect                    |  |
|-------------------|---------------------------|--|
| 11. transcription | _____                     | a. stop codon is reached on mRNA in ribosome |
| 12. translation   | _____                     | b. mRNA is made                              |
| 13. _____         | protein production stops  | c. AUG mRNA codon enters the ribosome        |
| 14. _____         | protein production begins | d. a polypeptide is formed                   |

**Critical Thinking** *continued***Linkages**

In the spaces provided, write the letters of the two terms or phrases that are linked together by the term or phrase in the middle. The choices can be placed in any order.

15. \_\_\_\_\_ transformation \_\_\_\_\_ a. Watson and Crick
16. \_\_\_\_\_ transformation not stopped by protein-destroying enzymes \_\_\_\_\_ b. Avery (1944)
17. \_\_\_\_\_ five-carbon sugar molecule \_\_\_\_\_ c. DNA double-helix structure discovered
18. \_\_\_\_\_ X-ray diffraction \_\_\_\_\_ d. nitrogenous base
19. \_\_\_\_\_ tin-and-wire DNA model \_\_\_\_\_ e. two or three nucleotide chains
20. \_\_\_\_\_ DNA nucleotides bond to exposed bases \_\_\_\_\_ f. harmless bacteria becomes harmful
- g. Wilkins and Franklin
- h. DNA is responsible for transformation
- i. DNA replication
- j. harmless R and heat-killed S bacteria are injected into mice
- k. DNA unwinds
- l. phosphate group

**Analogies**

An analogy is a relationship between two pairs of terms or phrases written as  $a : b :: c : d$ . The symbol  $:$  is read as "is to," and the symbol  $::$  is read as "as." In the space provided, write the letter of the pair of terms or phrases that best completes the analogy shown.

- \_\_\_\_\_ 21. A : T ::
- a. T : C
- b. C : G
- c. C : T
- d. T : G
- \_\_\_\_\_ 22. adenine : purine ::
- a. guanine : pyrimidine
- b. cytosine : purine
- c. pyrimidine : purine
- d. thymine : pyrimidine

Critical Thinking *continued*

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- \_\_\_\_\_ 23. DNA : RNA ::
- a. single stranded : a double stranded
  - b. cytoplasm : nucleus
  - c. deoxyribose : ribose
  - d. messenger RNA: transfer RNA
- \_\_\_\_\_ 24. promoter : transcription ::
- a. codon : anticodon
  - b. codon : genetic code
  - c. DNA polymerase : replication
  - d. start codon : translation
- \_\_\_\_\_ 25. transcription : in eukaryotic nucleus ::
- a. DNA replication : inside DNA
  - b. transcription : outside host cell
  - c. translation : in cytoplasm
  - d. translation: inside tRNA