

# **Test Bank for Exercise and Physical Activity for Older Adults 1st Bouchard**

1. Life span refers to
  - a. how long a given person lives
  - b. the average lifetime of an individual member of a species
  - \*c. the typical lifetime of people in the absence of any external limitations
  - d. none of the above
  
2. An age-related disease is one that
  - a. only occurs in old people
  - \*b. is progressively more likely to occur with age
  - c. invariably causes death
  - d. is incurable
  
3. Darwin's theory suggests that the force of evolution in mammals tends toward
  - a. living long enough to reproduce once
  - b. living long enough to reproduce several times
  - \*c. internal immortality
  - d. none of the above
  
4. An evolutionary nonprogrammed aging theory suggests that the force of evolution tends toward
  - a. unlimited life span
  - b. living long enough to reproduce
  - \*c. a species- and population-specific minimum life span
  - d. a species- and population-specific optimum life span
  
5. What is genomic intertrait linkage?

- a. a characteristic of genes that explains why different species have different traits
- b. a property of genome design that causes genetic diseases
- \*c. a property of genome design that makes it difficult for the evolution process to produce a particular trait without also producing another different trait
- d. none of the above

6. What is the evolutionary antagonistic pleiotropy theory of aging?

- \*a. Genomic linkage between aging and some beneficial trait allows existence of aging even though it reduces a person's ability to produce descendants.
- b. Aging is antagonistic to survival and reproduction.
- c. Pleiotropy causes aging by limiting cell division.
- d. Aging unavoidably results from genetic flaws such as pleiotropy.

7. What is a programmed aging theory?

- a. Aging is caused by the pleiotropic program.
- b. Aging is an inevitable consequence of the growth program.
- \*c. Aging is purposely caused by a biological program because internally limiting lifetime produces an evolutionary advantage.
- d. none of the above

8. What are population-oriented theories regarding the evolution process?

- a. Natural selection favors some groups over others, leading to the evolution of traits that are group-advantageous.
- b. A trait that benefits survival of a population can evolve even if it is personally adverse.
- c. Increasing a population's ability to adapt can offset a reduction in a person's ability to reproduce.
- \*d. all of the above

9. What is regulated programmed aging?

- a. a theory suggesting that increasing life span is impossible
- b. a theory of aging based on logical principles similar to those used in computer programs
- \*c. a theory suggesting that the aging program can adjust life span to accommodate detection of local or temporary conditions that affect optimum life span
- d. none of the above

10. What is anti-aging medicine?

- a. treatments that reduce the appearance of aging
- b. treatments directed at increasing health during older ages
- c. treatments directed at increasing human life span
- \*d. all of the above

11. Evolvability theories suggest that

- a. the ability to evolve is an inherent property of living organisms
- b. the ability to evolve is a constant
- \*c. the ability to evolve is itself mainly the result of evolved traits and can vary among populations
- d. none of the above

12. Programmed aging theories suggest that biological mechanisms behind aging could include

- a. hormone signaling
- b. means for detecting external conditions that affect the optimum life span for a population
- c. up- and down-regulation of repair processes
- \*d. all of the above

13. Genetics discoveries suggest that programmed aging is impossible.

- a. True
- \*b. False

14. Age-related diseases and conditions cause the majority of all deaths in developed countries.

- \*a. True
- b. False

15. Some programmed aging theories suggest that exercise and some other forms of stress delay aging and increase life span.

- \*a. True
- b. False

16. The main issue surrounding aging theories today is the degree to which nonextinction of a population influences the evolution process.

- \*a. True
- b. False

17. Nonprogrammed aging theories suggest that aging, per se, is an untreatable condition because the causes of the many different symptoms are independent of each other.

- \*a. True
- b. False

18. Genetics discoveries have exposed issues with Darwin's theory as it is widely taught.

- \*a. True
- b. False

19. Describe the evolutionary theories of aging.

Correct Answer:

The evolutionary theories of aging attempt to explain how aging relates to the evolution process, and more specifically, why senescence varies so much between species and otherwise resembles evolved species-specific characteristics of organisms. Evolutionary theories consider that aging is a *trait*, or evolved design feature of an organism, as opposed to a defect or the result of a fundamental limitation.

20. What was Peter Medawar's key evolutionary mechanics concept regarding aging?

Correct Answer:

Medawar suggested that the force of evolution toward living and reproducing longer under wild conditions declines with age in a species- and population-specific manner. Lack of senescence symptoms would provide negligible benefit to a wild population beyond the age at which essentially all of its members could expect to be dead from external causes such as predation, infectious disease, and

starvation.