Aging Under the Microscope: A Biological Quest

1) The progressive deterioration of many bodily functions over time is known as
   a) aging
   b) senescence
   c) entropy
   d) obsolescence

2) Life expectancy in the US rose in the 20th century from about _____ years in 1900 to about _____ years for females in 1999.
   a) 47, 69
   b) 57, 69
   c) 57, 79
   d) 47, 79

3) All the following are Error Theories EXCEPT
   a) Endocrine Theory
   b) Rate of Living
   c) Crosslinking
   d) Free Radicals

4) Scientists suspect that lifespan is determined by both environmental and genetic factors, with genetics accounting for up to _____ of this complex interaction.
   a) 25%
   b) 35%
   c) 45%
   d) 55%

5) Michael Jazwinski studies genes that seem to promote longevity in
   a) fungus
   b) bacteria
   c) worms
   d) yeast

6) The only known intervention shown to prolong life in species ranging from yeast to rodents is
   a) caloric restriction
   b) exercise
   c) unrestricted nutrients
   d) irradiation

7) Which technology allows researchers to survey the expression of thousands of genes at once?
   a) functional staining
   b) microarrays
   c) holographic imaging
   d) gene spectronomy

8) The Hayflick limit states that young human fibroblasts divide about _____ times and then stop.
   a) 2
   b) 12
   c) 24
   d) 50
9) The p53 genes is known as a  
   a) tumor suppressor gene  
   b) catalyst gene  
   c) prewashed gene  
   d) senescence gene

10) During mitosis, each time a cell divides, the telomeres  
    a) get longer  
    b) get shorter  
    c) mutate  
    d) split into 4 copies

11) Oxygen free radicals are potentially harmful byproducts produced by  
    a) ribosomes  
    b) cytoplasm  
    c) golgi apparatus  
    d) mitochondria

12) The most common protein molecule in our bodies which forms the connective tissue that provides structure and support for organs and joints is  
    a) elastin  
    b) collagen  
    c) reelin  
    d) f-spondin

13) This disease which has several features of premature aging, involves a defect in the helicases.  
    a) Progeria  
    b) Norrie Disease  
    c) Werner's Syndrome  
    d) Cockayne Syndrome

14) These are produced when cells are exposed to various stresses.  
    a) heat shock proteins  
    b) amino acids  
    c) dehydration reaction  
    d) adaptive immune system

15) Which hormone is made by the pineal gland?  
    a) testosterone  
    b) growth hormone  
    c) melatonin  
    d) estrogen

16) Some studies show that testosterone supplementation may increase a man's risk of  
    a) heart attack  
    b) high cholesterol  
    c) stroke  
    d) diabetes

17) Insulin-like growth factor (IGF-I) is produced primarily in the  
    a) pancreas  
    b) kidneys  
    c) spleen  
    d) liver
18) Which of the following is most stable through adulthood?
   a) body fat
   b) bones
   c) sight
   d) personality

19) Compelling evidence suggests that _____ may counteract some of the natural declines in the immune system as well as in other physiological systems of aging animals.
   a) vitamin E
   b) caloric restriction
   c) exercise
   d) play

20) People age _____ and older constitute the fastest growing segment of the U.S. population.
   a) 55
   b) 65
   c) 75
   d) 85

21) A unique characteristic of stem cells is their ability to replicate for indefinite periods without becoming senescent.
   a) True
   b) False