Quiz #5 BSC 2011 2004 Fall

NAME___**KEY – answers in bold type**_____

Circle the BEST answer for each question. Each question is worth 4 points, except number 1, which is worth 5.

1. In the **logistic** model for population growth; dN/dt = rN[(K-N)/K] , the term dN/dt

a. can increase or decrease as N increases
b. is equal to growth rate times the population size
c. is inversely proportional to the carrying capacity
d. is equal to per capita population growth rate
e. is constant

2. Which of the following **must** be true in a population that is regulated?

a. the birth rate increases with density
b. the death rate decreases with density
c. both a and b must be true
d. the carrying capacity is determined by the availability of food
e. population growth is negative if N > K

3. Which of the following gives the correct interpretation of the survivorship curve below? (4 points)

a. the rate of juvenile mortality is higher than adult mortality
b. the rate of adult mortality is higher than juvenile mortality
c. mortality rate is independent of age
d. the risk of mortality declines with age
e. none of these is the correct interpretation

4. Which of the following describes a situation in which a density dependent factor is operating

a. a predator keeps the death rate of its prey constant by eating more of them when the population is larger
b. a predator keeps the population of its prey species well below its carrying capacity.
c. an early frost kills a large fraction of the insects in a population
d. food limitation reduces the birth rate as the population increases
e. none of the above

5. Gause's work on competition between two species of single celled *Paramecium* illustrated that

a. single celled organisms grow exponentially when alone but grow according to the logistic model when grown together
b. predation can stabilize the population growth of a prey population
c. populations of species that share resources will show repeated cycles of increase and decrease
d. a species will decrease the size of its niche when a competitor is present.
e. when two species share a single resource, the better competitor will drive the inferior competitor extinct

6. An interaction between species that has a positive effect on the population of one species and a negative effect on the other is called

a. predation
b. competition
c. mutualism
d. commensalism
e. none of he above