一、選擇題(單選，共30分，每題3分)

1. Vegetation patterns affect the reflectance of solar radiation, known as its
   A. albedo.
   B. evapotranspiration.
   C. Hadley index.
   D. lapse rate.
   E. Milankovitch index.

2. Which of the following types of change occurs over generations rather than within a lifetime?
   A. Acclimatization
   B. Transpiration
   C. Adaptation
   D. Equilibration
   E. Pubescence

3. W If a population of monkeyflowers has 500 members with 135 of genotype DD, 280 of genotype Dd, and 85 of genotype dd, what is the frequency of the D allele?
   A. 0.135　　B. 0.275　　C. 0.415　　D. 0.5　　E. 0.55

4. Which of the following is <u>not</u> an abiotic feature of the environment?
   A. The salinity of the soil
   B. The density of earthworms present in the soil
   C. The amount of sunlight the soil receives
   D. The moisture content of the soil
   E. The air temperature

5. The addition of excess nutrients into aquatic systems often disrupts the ecosystem. This phenomenon is known as
   A. environmental stochasticity.
   B. Allele effects.
   C. dampened oscillations.
   D. eutrophication.
   E. resource dysgenesis.

6. Which of the following would most likely present a barrier to a population's experiencing the benefits of the rescue effect?
   A. Inbreeding
   B. Delayed density dependence
   C. Deterministic stochasticity
   D. Genetic drift
   E. Isolation by distance

7. Many species of butterflies that are noxious to predators also have bright red coloration. This feature, which functions as a signal to potential predators that eating them will be unpleasant or harmful, is an example of _____ coloration.
   A. exploitative
   B. cryptic
   C. apomictic
   D. aposematic
   E. induced

8. An organism that lives in or on another organism is called a(n)
   A. parasite.
   B. parasitoid.
   C. symbiont.
   D. endoparasite.
   E. plasmodium.

9. Some plants have _____ that protect against specific parasites, much like the memory cells of the vertebrate immune system.
   A. lignins
   B. resistance genes
   C. scolexes
   D. merozoites
   E. immunity genes

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10. Assume that lions running on grass neither benefit nor are harmed by this interaction, but their activity helps the grass grow. This is an example of a
   A. commensalism.
   B. endosymbiosis.
   C. mutualism.
   D. symbiosis.
   E. ammensalism.

二、 問答題(共 70 分)

1. Defining a community by using biological or physical guidelines (15 points).

2. Describe the mechanisms of succession? (20 points).

3. Defining the alpha, beta, and gamma diversity (15 points).

4. Distribution and abundance of species in communities is dependent on: (20 points)