1. Define and explain the following terms:

   (1). Primary Productivity (6%)
   (2). Cyclic Index (6%)
   (3). J-Shape Growth Form (6%)
   (4). Ecological Niche (6%)
   (5). Allogenic Succession (6%)

2. Define "Energy Quality" and describe the relation between the energy and food chain. (10%)

3. (1). Describe the "Sulfur Cycle" and "Phosphorus Cycle" tend to circulate in the biophere in characteristic paths from environment to organisms and back to the environment. (10%)
   (2). Explain why most elements and compounds are more earthbound than nitrogen, oxygen, carbon dioxide, and water, and their cycles follow a basic sedimentary cycle pattern. (5%)

4. Define " Carrying Capacity", draw a graph and describe the relation between the Carrying Capacity and Population Growth. (10%)

5. (1). Define " Intrinsic rate of natural increase". (5%)
   (2). Explain "When the environment is unlimited (space, food, or other organisms not exerting a limiting effect), the specific growth rate (the population growth rate per individual) becomes constant and maximum for the existing microclimatic conditions". (10%)

6. Define "Species Diversity" and discuss its components in detail. (10%)

7. Define "Ecotone" and discuss the significance of forest edge. (10%)

8. Define "Group Selection" and explain the significance of "Struggle for existence" and "Survival of the fittest". (10%)