6. Discuss how the concept of carrying capacity can be applied in wildlife management. Provide a specific example of how this concept can be applied in managing population of a particular species.   (8+7)

[This question paper contains 4 printed pages.]

Your Roll No...............

Sr. No. of Question Paper : 1237   **F**

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Answer any **four** questions.

3. **All** Questions carry equal marks.

1. Briefly explain the following :   (3×5=15)

   (a) Arctic Tundra Biome

   (b) Thermoregulation

(c) Protocooperation

(d) Polyploidy

(e) Nutrient Budget

2. Write short notes on the following : $(3\frac{1}{2}\times4=15)$

(a) Niche differentiation

(b) Species interations

(c) Detritus pathway of energy flow

(d) Population growth models

3. Differentiate between the following (**any three**) : $(5\times3=15)$

(a) Discrete and Continuum Community Model

(b) Density-dependent and Density-independent population growth

(c) Ruderal Species and Stress Tolerance Species

(d) Carbon cycle and Nitrogen cycle

4. (a) Elucidate the concept that an ecosystem can recover and reestablish its equilibrium state following any environmental or physical disruption. Provide an explanation grounded in relevant theories. Furthermore, identify and discuss the two essential elements that underpin this concept.   (8)

(b) Apply your knowledge of population characteristics to analyze survivorship curves and age structure.   (7)

5. (a) Explain Liebig's Law of Minimum. Discuss the subsidiary principles which strengthen the law.   (8)

(b) Analyze the energy flow in ecosystems, emphasizing aspects such as primary production, trophic efficiency, and ecological pyramids.   (7)