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Student No.:

1. Follow the silvicultural recommendations (below thinning, thinning intensity 5-20%, thinning intervals 5-20 years), design 10 uneven-aged management plans, predict forest dynamics at the stand level for 50 years with the matrix model (p.58-60).
2. Modify the module of thinning response. Stage I (0-5 yrs), self-thinning = mortality*0%; Stage II (6-10 yrs), self-thinning = mortality * 50%; Stage III (10+ yrs), self-thinning = mortality * 100%.
3. Simulate the dynamics of stand development for 50 years without thinning (unmanaged). Compute biodiversity (Shannon index, $H' = -\sum_{i=1}^S (N_i/N) \ln(N_i/N)$), and evenness ($E = H'/S$).
4. Mimic the dynamics of stand development for 100 years with thinning (10 management plans). Calculate timber value (timber prices, table 6.2), biodiversity, and evenness.
5. Assessment of multi-functional forest ecosystem services (economic and ecological values, 10 scenarios/harvesting schedules) using AHP.

1. 根据森林抚育规程（例如，下层伐，间伐强度 5-20%，间伐间隔期 5-20 年），基于转移概率矩阵模型（实验指导书，p.58-60），设计 10 套异龄林经营方案，预测 50 年后的林分动态变化。
2. 根据间伐效应三阶段原理，简化修正计算间伐效应。阶段 I（0-5 年）无自疏伐，自疏伐=原枯损率*0%；阶段 II（6-10 年）减半自疏伐，自疏伐=原枯损率*50%；阶段 III（10 年后）恢复自疏伐，自疏伐=原枯损率*100%
3. 基于上述矩阵模型，模拟封山育林 50 年后的林分生长，计算生物多样性和均匀度（实验 7.2, p.79). Shannon index, $H' = -\sum_{i=1}^S ((N_i/N) \ln(N_i/N))$; Evenness, $E = H'/S$ 。
4. 基于上述 10 套经营规划方案，模拟经营 100 年后的林分生长，计算不同经营规划方案的木材收益（木材价格，表 6.2），生物多样性和均匀度。
5. 应用层次分析法（AHP，实验 7.4，p.85-88），兼顾经济价值和生态价值，对上述不同经营规划的森林多功能服务进行评价。