一、解釋名詞（每題 2.5 分，共 25 分）

1. Catchability
2. Fishery-dependent data and fishery-independent data
3. Age-length key
4. Length at 50% maturity
5. Bycatch species
6. Natural mortality and fishing mortality
7. Recruitment
8. Maximum Sustainable Yield
9. Surplus production
10. Density dependence

二、問答題（每題 25 分，共 75 分）

1. The concept of the "stock" is fundamental to fisheries management. Please explain the definition of a stock? (10 points) What are the methods for discriminating stock? (15 points)

2. The standardization of catch-per-unit-effort (CPUE) is now widely regarded as a prerequisite for the use of CPUE as abundance index. Please explain why the nominal CPUE index, derived from yearly means of the raw CPUE data, can be severely biased? (10 points) How to conduct a CPUE standardization? (15 points)

3. A Kobe plot is a visual way to show the status of a fish stock. The plot is divided into four panels which correspond to a particular condition of the stock. Please explain the status of the four fish stocks (10 points) and which fish stock among four panel is in the rebuilding condition. (15 points)

試題隨卷繳回