# 99 年博士班資格考（管理計量方法）

4 小時，closed book

Questions: 題目分成 A、B 二部份，作答時，請注意各題之比例配分並標示題號

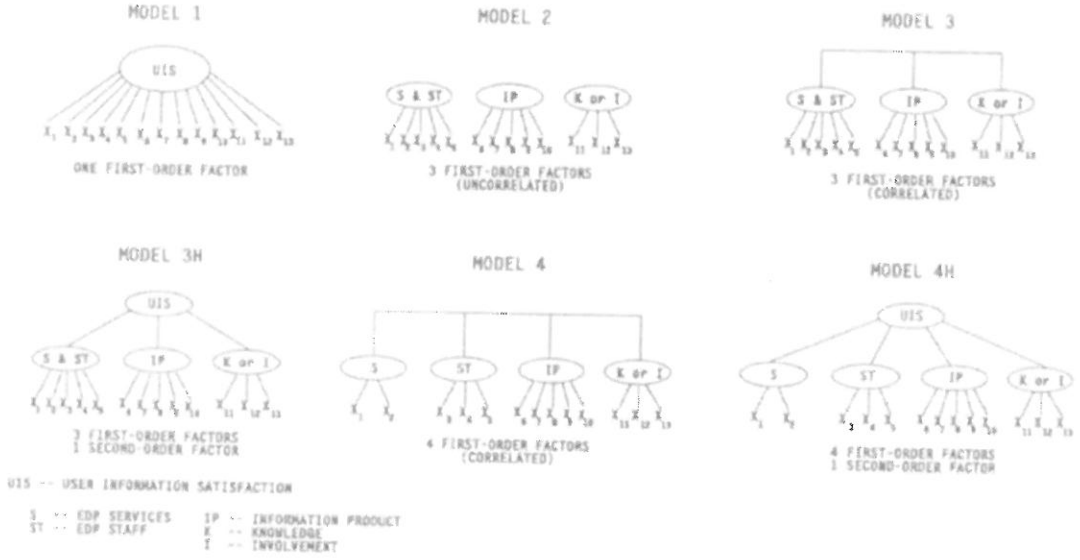
**Part A**: ***"Determinants of customer acceptance of multi-service network: An implication for IP-based technologies"***

1. For the discriminant and convergent validity tests (pp. 19-20), author claimed that the measure items satisfied construct validity, please **criticize** the presentation results in Table 1 and Table 2 (10%)

2. Based on the proposed and result of research model (Figure 1, pp. 18 & Figure 2, pp. 21) and variables in final instrument (Appendix A, pp. 21-22), please formulate the equations (measure and structural) (25%), **in terms of LISREL notation** (symbols), and transfer into Matrix forms (15%).

Part B:

1. Describe and discuss appropriate tests for comparison with models below. (20%)




2. Consider the model $S_t = \alpha + \beta Y_t + \gamma A_t + u_t$, where S is the sales of a firm in the $t$th

state, Y is total income in the state, and A is the amount of money spent by the company advertising in that state(t = 1, 2,..., 50).

a. You suspect that the random error term $u_t$ is heteroscedastic with a standard deviation $\sigma_t$ that depends on the size of the population $P_t$. Describe step by step how you will go about testing for this. Be sure to state (i) the null and alternative hypotheses, (ii) the regression(s) you will run, (iii) the test statistic you will compute and its distribution( including the degrees of freedom), and (iv) the criterion for acceptance or rejection of the null hypothesis. (10%)

b. Suppose you find that there is heteroscedasticity but ignore it and use OLS to estimate the model. Are your estimates (i) unbiased, (ii) consistent, (iii) efficient? Carefully justify your answer. (10%)

c. Assume that $\sigma_t = \sigma P_t$. Describe step by step how you will obtain estimates that are BLUE( define the term). State any theorem that enables you to justify the claim that your estimates are BLUE. (10%)