

Examen Decision and Risk Analysis Januari 2022

1. stable assignment
 - a. preferences students & schools are known, make a stable assignment
 - b. 2 statements, prove wrong or give example
 - i) an instance which has at least 2 different efficient assignments
 - ii) an instance which has at least 2 different assignments that are both efficient and stable
2. congestion
 - a. determine best responses
 - b. are there dominant strategies?
3. make a decision tree (min expected entropies)
 - a. make classification table
 - b. give confusion matrix
4. $u(x) = 2^x/100000$
 - a. risk-seeking/averse/neutral?
 - b. 3 lotteries given, what are his preferences
 - c. markov decision tree with utilities; which action should he use?
5. auctions
 - a. determine who gets a slot and price per click (5 bidders and 3 slots)
 - b. single-item auction, price = 0.5*second highest bid
 - i) maximizing welfare?
 - ii) strategy proof?
6. robust optimization: thief wants to steal a,b,c,d. the values have a min and a max, which should he steal? (weights and value intervals given)
 - a. If he only takes D, what is the MR?
 - b. If he takes a subset, what is worst case (and value of this worst case)?
 - c. If he takes a subset, what is AR (and value of this AR)?

Tech trends & opportunities (11 pages for 3 hours, timing was more than ok)

- A. Questions about the A&U model, explain & how is it related to forecast and foresight, and the relationship?
- B. Scenario planning (3)
- C. Criteria of an entrepreneurial opportunity based on the testimonials (even though it was not to know, be careful!), about the potentials and challenges of the opportunity.
- D. Value mapping: 2 MCQ
- E. Ecosystems: MCQ too (not sure)

