1. (15%) Try to draw a single diagram and explain what are
   (a) manifest variables
   (b) latent variables
   (c) independent variables
   (d) dependent variables
   (e) mediating variables
   (f) intervening variables

2. (15%) What are types of strategies for the Information Systems? How important is the alignment of a company between its IS strategy and the Business strategy?

3. (10%) (a) Explain the effect of economics of scale in the industry of information goods, from the perspectives of demand and supply sides (5%). (b) Explain why the adoption of DRM (digital right management) technology might not benefit the profit-seeking providers (5%).

4. (12%) (a) Describe the rule of different types of the following auctions: (1) first price, sealed-bid auction (2) Vickery auction (3) English auction (4) Dutch auction (8%) (b) Which type of auction does eBay auction approximate to? Explain your answer (4%)

5. (8%) (a) Describe the purpose of the semantic Web technology (4%) (b) Explain the functionality of two international standard of specification of semantic Web: RDF (Resource Description Framework) and OWL (Web Ontology Language) (4%) 

6. (10%) (a) Describe the features of the following data mining tasks: association analysis and clustering analysis (5%) (b) Distinguish the features of content based and collaborative filtering approaches commonly used in recommendation systems (5%).

7. (30%) Taiwan High Speed Rail is a significant achievement in Taiwan's transportation network. However, the lack of ticketing and booking systems has caused difficulties and challenges. Please write an essay from the perspective of passengers to discuss the solutions to these problems.

   分数分配：(a) 解决上述问题之资讯方案的可行程度估15%；
   (b) 文章架构的严谨、顺暢估15%(注:需注意文章段落之起承转合及逻辑性)。