CIS319 Examiner's Report, Zone A, 2007

General remarks

I am pleased to say that the general standard of answers in this year's paper was good. However, there is still the old complaint that answers are still frequently on the brief side.

This is often due to lack of knowledge and students' inability to go into sufficient depth in their answers. Sometimes I feel it is due to a misconception on the part of students that a brief answer that is to the point is sufficient. However, 45 minutes to answer a question is quite a long time and students should use all of that time to aim for the best possible answer, rather than one that is just adequate.

Secondly, there still appears to be too much reliance on the subject guide and not enough information coming from other sources, such as the journals *Decision Support Systems* and *Management Science* and other material from the Internet.

Question 1

This was a very popular question on the examination paper.

Part (a) of the question was answered reasonably well, but some candidates failed to mention Expert Systems (ES) or Group Decision Support Systems (GDSS) and concentrated only on Transaction Processing Systems (TPS), Management Information Systems (MIS), Decision Support Systems (DSS) and Executive Information Systems (EIS). Though these explanations were accurate, they should have covered all six basic systems.

Part (b) of the answer was also reasonably well answered, but some students padded out their answers with irrelevant information from Brooke and Sprague's view on system development. Also, although Executive Information Systems were readily identified with Simon's Review Phase, there was a tendency to forget that they are also associated with the Intelligence Phase. Finally, in elaborating the stages of Herbert Simon's decision-making process, many students failed to mention **bounded rationality** and **satisficing behaviour**.

Question 2

Part (a) of this question was answered quite well and I reproduce the five equations below. I have also included the equilibrium condition, which is optional.

$Qd = f(Y, P, i, La)$ demand model
$Qs = f(P, i, La)$ supply model
$R = f(P, Qd)$ revenue model
$C = f(Qs, U, Pl)$ cost model
$\Pi = f(R, C)$ profit model
$Qs = Qd$ equilibrium condition.

Part (b) was not answered so well. The focus of the question was to compare Robert Blanning's metagraphs with Geoffrion's Structured Modelling Technique. In fact, too many candidates explained Blanning's normal forms in great depth rather than comparing the two methods on the basis of their graphical representation at a more general level. The essence of the comparison was the fact that Blanning's metagraph is the basis of a single organisational model incorporating all five sub-models, showing their inter-dependency, removing redundancy and perhaps indicating the presence of cycles. Geoffrion's Structured Model should have been explained in terms of the Elemental Structure, the Generic Structure and the Modular Structure. These different approaches could be compared according to the following criteria as laid down by Geoffrion:

- ability to accommodate all modelling representations
- independence of the solver from the model
- representational independence between mode and data
- immediate expression evaluation
- support all stages of the modelling life cycle.

Question 3

This was not a popular question and was not answered particularly well. Students mostly ignored the part asking for what additional data might be helpful to library staff.

The headings given in the question would have permitted dimensions such as:

- number of borrowings of a particular book per unit time period
- number of borrowings by author
- number of borrowings per title
- number of borrowings according to days overdue
- number of borrowings according to total fines raised
- number of borrowings per library member.

The point here was to recognise that the 'number of borrowings' was the central fact that could be categorised according to various dimensions.

Additional data that would be helpful would be the organisation of books into categories such as fiction and non-fiction, then into subcategories such as romance, crime, health, DIY, etc. This would allow a further dimension based on book category.

Various questions could be answered from such a model such as:

- the number of times a book is borrowed in a specific time period
- the total fines generated by a book, which could be an indicator of popularity
- the average number of overdue books
- the popularity of certain authors.

Question 4

This was the second most popular question in the examination and was generally answered well. My main criticism would be that, although candidates clearly understood the Nominal Group Technique and explained it very well, they did not put it in the form of an argument that would convince the departmental manager to adopt the technique. This is what Part (a) of the question specifically asked for.

In Part (b) of the answer there was sometimes confusion between the Delphi Method and NGT. It is important to note that in the Delphi Method, the experts do not meet face-to-face as many candidates assumed. Also, many answers did not bother to mention that with a Group Decision Support System (GDSS), the presence of a professional facilitator would be a great advantage. The Delphi Method probably had no advantage over the NGT in this particular environment. However, the GDSS would have had considerable advantage. Some of these are that it economises on time because of the parallel nature of inputting information from the group, anonymity can also be assured and easier access to past stored information and analytical tools help in the decision-making process.

Question 5

This question was not popular and students obviously had difficulty in coming up with practical examples of how the EIS might help the minister and what type of parliamentary questions it could answer. Answers, therefore, tended to be too theoretical and merely discussed EISs in general. There was also a lack of arguments against developing such a system, e.g. cost, time delays in building such a system, lack of competent staff and the clear history of computer disasters within the UK public sector. I have listed below some of the statistics that such a system might produce:

- It could provide status access to various accounting statistics such as total expenditure and number of claimants.
- Drill down facilities should allow total expenditure figures to be broken down to reveal details on particular allowances within the overall benefit and perhaps expenditure per administrative region.
- Drill down on claimants cold reveal details of family types such as marital status, number of dependents and length of time on benefit.
- The monitoring of critical success factors (CSFs) might include take-up rates and the number of fraudulent cases successfully prosecuted.
- Exception reporting could be used to alert the minister to unusual changes in benefit payouts or sudden increases in the number of claimants.
- Analysis of data could be carried out by simple descriptive statistics such as averages and trend analysis on benefit expenditure and other relevant critical success factors.

Many of these could form the basis for answering parliamentary questions, but usually MPs are interested in the trend in total expenditure on such benefits and which categories of the population are receiving them.