IMIS DIPLOMA QUALIFICATIONS

Information Systems Development
(D6)

Tuesday 10th December 2013 14:00hrs – 17:00hrs

DURATION: 3 HOURS

Candidates should answer ALL the questions in Part A and THREE of the five questions in Part B. Part A carries 40% of the marks available and Part B carries 60%. Candidates should allocate their time accordingly.

No reference material of any kind may be taken into the examination.

[Turn over]

Part A: Answer all of the following 8 questions

1. Describe the main steps and deliverables associated with the analysis phase of systems development.

(5 marks)

2. Describe the main steps and deliverables associated with the design phase of systems development.

(5 marks)

3. Explain the role that business process decomposition has in the construction of a set of Dataflow Diagrams.

(5 marks)

4. Explain the difference between logical process models and physical process models.

(5 marks)

5. Describe how the data model and process model should be balanced against each other.

(5 marks)

6. Describe the role of iteration in the development of Use Cases.

(5 marks)

7. Describe the basic process of User Interface Design.

(5 marks)

8. Explain why standards are important in User Interface Design.

(5 marks)

Part B: Answer 3 of the following 5 questions (20 marks each)

1. Develop an entity relationship model from the following information about a car insurance company:

   The company's customers own one or more cars each. We need to store each customer's name, age and gender and the make, model and age of each car. Each car has associated with it zero to any number of recorded accidents. We need to store the date and location of any accident along with the amount of damages paid.

   Your work will be marked as follows:

   i)   Entities (3 marks)

   ii)   Non-key attributes (8 marks)

   iii) Relationships – including primary and foreign keys. (9 marks)

2. The following questions relate to the use of a CRUD matrix in structured analysis and design.

   i)   Use a suitable example to explain the relationship between dataflow diagrams and entity relationship diagrams. (10 marks)

   ii)   Explain how the CRUD matrix can help to improve the quality of these diagrams. (10 marks).

3. The following questions relate to the role of Use Cases in systems development.

   i)   Briefly explain how Use Cases are employed in user interviews or Joint Application Development (JAD) sessions. (6 marks)

   ii)   Explain why the event-response list is such an important part of the Use Case description. (8 marks)

   iii) Describe the best way to validate the contents of a Use Case Model. (6 marks)

4. Suppose that a Veterinary Practice was interested in creating a new software system to allow customers to book appointments for their pets over the Internet.

    i)   What should the practice consider when deciding on whether to invest in a custom, packaged or outsourced system solution? (10 marks)

    ii)   What is an alternative matrix? How could it be used to help the practice decide on the most appropriate design strategy? (10 marks)

5. The following questions relate to User Interface Design.

    i)   Explain THREE important user interface design principles. (6 marks).

    ii)   Use a suitable example to explain how the process of user interface design can be driven by Use Case analysis. (10 marks)

    iii)   Explain how a system can be designed to be used by both experienced and first time users. (4 marks).