



Semester I Examinations 2011/2012

Exam Code(s) 3IF121; 3BA1; 4BA1;1MF1; 1SD1
Exam(s) B.Sc. in Information Technology
B.A.
MSc in Software Design and Development
Higher Diploma in Software Design and Development

Module Code(s) CT318
CT865
Module(s) Human Computer Interaction

Paper No. 1
Repeat Paper

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Instructions:

Candidates should answer **Question 1** and **two other** questions.
All questions carry equal marks.

Duration

2 hours

No. of Pages 3

Requirements:

MCQ
Handout
Statistical/ Log Tables
Cambridge Tables
Graph Paper
Log Graph Paper
Other Materials

Release to Library: Yes

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- Q.1** You have been asked to design an interactive web-based *music learning environment* for children to support their development of effective music skills. The system must be appealing and fun to use, engage the children, and enable navigation by a variety of means (e.g. by topic, or through sequential lessons, or by activity).

The site must also store the children's details, greet them when they enter, store a record of their performance on various games and tasks, and recommend areas for further attention. The system is competing against a variety of commercial gaming platforms and so must be very well designed to appeal to its audience.

The company has indicated that they want an initial design submission from you to include the following:

- (a) A PACT analysis for this application. [6]
- (b) A paper prototype of three of the interface screens, representing the system's functional organisation and overall "look and feel". Clearly outline your rationale for each of the design choices you make (e.g. interaction styles). [9]
- (c) An evaluation plan, clearly outlining what activities, when, how and by whom the evaluation activities will be undertaken, for the system which will support comprehensive testing of your design. [5]

- Q. 2. (a)** *Anthropomorphism has no place in interactive software design and is best left to advertising.* Do you agree? Explore the role of anthropomorphism in effective interactive software development, supporting your answer with relevant examples. [6]

- (b) You have been asked to design a *remote control* device that can be used to control the lighting, heating, curtains/blinds for both domestic and public settings. Prepare a prototype design, outlining the *design principles* you found relevant in solving this problem. [8]

- (c) Which interaction style would you apply to the design of each of the following and why?

- A Mobile blood pressure Monitoring Device
- An Events Ticketing Machine
- A Schedule Management System for Mobile and Desktop Use

[6]

Q. 3. (a) (i) Distinguish between a *conceptual* model and a *physical* model in design.

(ii) You have been tasked with developing a website for a chain of gyms. Outline the progression from Conceptual to Physical Design in this context, clearly identifying the inputs and outputs for each design phase.

[8]

(b) Given that good design is dependent on good designers, not expensive tools, comment on the role of **software tools** in interaction design. Support your answer with relevant examples.

[6]

(c) Choose an appropriate *evaluation strategy* for each of the following situations. In each case identify: the participants, the technique to be used, and the representative tasks to be examined.

(i) You are designing a new web-based project management application for project management professionals.

(ii) You have been asked to develop a web site for your local sports club.

(iii) You want to design a new game application for the iPhone.

[6]

Q. 4. (a) Effective interaction design is ultimately about the correct assignment of responsibilities to the parties participating in the interaction, i.e. the human and the computer. From your study of the various theories, models, processes, and techniques of interaction design, comment on the validity of the above statement, illustrating your response with appropriate examples as necessary.

[10]

(b) In designing an interactive application discuss the role of *world* and *head* vectors in enabling effective progression from novice to expert use, illustrating your response with appropriate examples.

[5]

(c) Using appropriate examples, explain Norman's *gulf of execution* and *gulf of evaluation* as they relate to successful interaction design.

[5]