

CS1Q Resit Exam

1.

a) Please provide BRIEF answers to the following questions:

- i) What is meant by the term 'subjective satisfaction'?
- ii) Give two differences between a user's and a designer's mental model of an interactive system.
- iii) What is meant by the acronym RSI?
- iv) What impact does perception has on human-computer interaction.
- v) What is participatory design?

[2 marks per answer, 10 marks in total]

b) Identify three benefits that the IEC802.11 standard has had for mobile human computer interaction.

[3 marks]

c) Peter Bodor, public relations manager at Ericsson has stated that: "WAP's disappointment was caused by industry failure to manage expectations, and the main problem was its slowness. This won't be a problem with 3G. The 3G Internet experience will be as good as surfing from home, with the added benefit of location-based services making the experience more personal". What usability problems complicate surfing the web on a mobile telephone compared to desktop browsers.

[5 marks]

d) You have been asked to help in the design of a new game that will be included with a new mobile telephone. Write a brief technical report on how you would consult users during the requirements elicitation for such an application. Hint: you do not need to design the game as part of your answer.

[7 marks]

Solutions

1.

a) Please provide BRIEF answers to the following questions:

i) What is meant by the term 'subjective satisfaction'?

[Bookwork/seen problem]

Subjective satisfaction refers to the 'pleasure' or 'fun' or 'enjoyment' that users experience when interacting with a system. It contrasts with other metric intended to measure task completion/performance etc.

ii) Give two differences between a user's and a designer's mental model of an interactive system.

[Bookwork/seen problem]

The user's mental model is likely to be partial – it may miss both detail and coverage of the designers. In particular, it will not typically include implementation details that may be known to the designer. Conversely, the designers' mental model may lack an appreciation of application domain details. In particular they may be unaware of the manner in which a system supports wider objectives and tasks.

iii) What is meant by the acronym RSI?

[Bookwork/seen problem]

RSI refers to repetitive stress or strain injury. Typically, in HCI it describes upper limb disorders that stem from over-use and abuse of interaction devices. Carpal tunnel syndrome can be one result of this abuse.

iv) What impact does perception has on human-computer interaction.

[Bookwork/seen problem]

Perception describes the processes by which we gather information from our surroundings using our senses. Vision and hearing dominate interaction. If we cannot see a display or hear a warning then we are unlikely to respond correctly. Hence issues such as font design are a key concern of HCI.

v) What is participatory design?

[Bookwork/seen problem]

Participatory design involves end users in the development of an interactive system. End-users can act as representatives or spokespeople for their needs. However, it can be expensive as these individuals may not contribute to implementation directly and they may not be able to also continue with their normal tasks. They may also lose touch with their colleague's views as they engage more closely with design teams.

[2 marks per answer, 10 marks in total]

b) Identify two benefits and one limitation of the IEC802.11 standard for mobile human computer interaction.

[3 marks]

[Seen problem]

There are numerous answers to this. IEC802.11 enables a range of different devices to connect over a radio LAN. The standard helps to ensure agreement over the protocols that are used to enable this communication. Other solutions might refer to the low cost nature of this approach and the benefits that it provides for particular classes of end-user including schools, universities and hospitals. We have also mentioned the emergence of gorilla networks and public service schemes in airports and cities. Limitations include the problems of establishing adequate coverage within large buildings, of encryption and security etc.

c) Peter Bodor, public relations manager at Ericsson has stated that: "WAP's disappointment was caused by industry failure to manage expectations, and the main problem was its slowness. This won't be a problem with 3G. The 3G Internet experience will be as good as surfing from home, with the added benefit of location-based services making the experience more personal". What usability problems complicate surfing the web on a mobile telephone compared to desktop browsers.

[5 marks]

[Seen/unseen problem]

The quote gives a hint at some solutions. The response times for mobile devices are typically a good deal slower than those associated with convention Internet connections. The connectivity is also less reliable with problems of coverage. Further issues relate to the suitability of input and output devices on mobile technology. The stop-gap solutions involving cards etc in WML create further problems in converting standard web pages into a form that can be viewed on a mobile device so again the information content is unlikely to be comparable within the near future.

d) You have been asked been asked to help in the design of a new game that will be included with a new mobile telephone. Write a brief technical report on how you would consult users during the requirements elicitation for such an application. Hint: you do not need to design the game as part of your answer but you must justify the techniques you choose to use such as interviews, focus groups etc.

[7 marks]

[Unseen problem]

There are many different solutions to this question. I would advocate a mix of observational studies and of focus groups. The observational studies would be used to identify situation in which users might be interested in playing games on a mobile telephone. In particular, I would use them to decide whether the game should be single user or involve some form of group related team playing. Focus groups would then be used to provide further explanations and insights into the behaviours that were identified in the initial studies. I would also advocate an analysis of competitor products and of market surveys involving users who would identify the reasons why a game might persuade them to buy a mobile telephone. The claimed benefits of a particular design would then form criteria for the subsequent validation of any system.