



# MANICALAND STATE UNIVERSITY OF APPLIED SCIENCES

## FACULTY OF ENGINEERING, APPLIED SCIENCES AND TECHNOLOGY

DEPARTMENT: COMPUTER SCIENCE AND INFORMATION SYSTEMS

MODULE: HUMAN COMPUTER INTERACTION

CODE: INSY411

SESSIONAL EXAMINATIONS

APRIL 2024

DURATION: 3 HOURS

EXAMINER: MR S. MARIME

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### INSTRUCTIONS

1. Answer *All* in Section A
2. Answer *three* questions in Section B.
3. Start a new question on a fresh page
4. Total marks 100

*Additional material(s): None*

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## SECTION A

### QUESTION 1

Figure 1 shows the front page of the Scottish government website. You have been asked to design a version of the page that can be viewed on small screens such as a mobile phone or PDA.



Figure 1: Scottish government web page

- How would you identify the needs of mobile users accessing the page? Keep in mind that the page needs to provide the same functionality and content as the current page. So you need to focus on identifying layout-related needs. (10)
- How would you evaluate your new design? Give a full outline of an empirical study of usability. Be specific about what you would measure,

under what conditions, and how you would decide if any differences in usability, relative to the full size page, were meaningful? (15)

## **SECTION B**

**Answer any three questions from this section**

### **QUESTION 2**

- a. Usability goals are typically operationalised as questions. Consider next question: *Is the product capable of allowing people to buy the goods they want?*
  - i. To which usability goal does this question refer? (1)
  - ii. Is this question a suitable formulation to operationalise that usability goal? Explain your answer. (4)
- b. Suppose you are asked to design a system to support the desk clerks in a bank office. Is it a good idea to play the role of desk clerk yourself for some time, as part of the analysis activities? Explain your answer. (8)
- c. What are the benefits of usability evaluations? Describe at least three. (12)

### **QUESTION 3**

- a. There are four basic activities of Interaction Design (ID). Explain the process of ID. (12)
- b. Explain the features of good and poor ID. (13)

### **QUESTION 4**

- a. You have been asked by a software company to provide a training session on user-centered design. Describe a user-centered design approach and techniques used. (10)
- b. Identify three types of disability and explain how these can cause difficulties when interacting with computer interfaces. (9)
- c. Discuss strategies interface designers can use to support users with disabilities. (6)

## **QUESTION 5**

- a. Shneiderman (1998) devised eight golden rules for Interface design. List six of these rules; give an explanation of what the rule is. (12)
- b. Why is it good practice to use standards and guidelines when designing interfaces? (4)
- c. Choose three evaluation techniques which could be appropriate for evaluating the interface of an air traffic control system. Justify your choices. (9)

**END OF EXAMINATION**