KISII UNIVERSITY

UNIVERSITY EXAMINATIONS

FOURTH YEAR EXAMINATION FOR THE AWARD OF THE

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY / BACHELOR OF SOFTWARE ENGINEERING

FIRST SEMESTER, 2023/2024

(AUGUST-DECEMBER, 2023)
SOEN 426/BIT 316: USER INTERFACE DESIGN

STREAM: Y4 S1   **TIME: 2 HOURS**

DAY: FRIDAY, 12.00 -2:00 PM   **DATE: 17/11/2023**

INSTRUCTIONS
1. *Do not write anything on this question paper.*
2. *Answer Question ONE [Compulsory] and any other TWO Questions*

QUESTION ONE

Please provide BRIEF answers to the following questions

a. Briefly distinguish between perception and cognition.   **4 Marks**

b. What is Human Computer Interaction?   **3 Marks**

c. Why is subjective satisfaction difficult to measure?   **3 Marks**

d. What is participatory design?   **2 Marks**

e. Why is it important to consider user satisfaction when evaluating HCI interfaces?   **3 Marks**

f. How can expert evaluations, such as heuristic evaluations, help in assessing HCI designs**?**   **4marks**

g. What is a mobile computing and briefly name at least two application of mobile computing? **4 Marks**

h. Name two differences between formative and summative evaluation **4 marks**

QUESTION TWO

a. User interface design often centers on identifying an appropriate abstraction for an underlying computer system. For example, the waste-paper basket on the desktop of most operating systems provides an abstraction of the delete function. Files are deleted by placing them in the waste-paper basket. What are the dangers associated with hiding the underlying complexity of computer systems in this way? **6 Marks**

b. The Johnson Corporation have won a contract to develop a web-based system that is intended to help elderly users find friends and relations that they have known in their childhood. Write a brief technical report for the manager of the project describing how you would go about conducting requirements elicitation for the design of an interface to this application. Discuss four reasons why expert users may not prove to be a good source of information about the requirements for an interactive system. **8 Marks**

c. Task analysis breaks users activities into a series of goals and sub-goals. In order to print a document, you must first select the 'print' command. You must then select the printer, the number of copies and so on. Briefly describe the benefits that task analysis can offer to the design of interactive computer systems. **6 Marks**

QUESTION THREE

a. Describe the importance of involving users in the design and evaluation of interactive systems. Discuss at least three methods or techniques for gathering user feedback and insights during the design process. **9 Marks**

b. Why might sighted users also benefit if designers consider the needs of blind users in the development of a web site. **6 Marks**

c. Why is it difficult for designers to obtain an impression of an expert user? mental model of an interactive computer system? **5 Marks**

QUESTION FOUR

a. Briefly explain the relationship between requirements elicitation and the summative evaluation of an interactive system **4 Marks**

b. Briefly explain what is meant by the terms perception, physiology and cognition. **6 Marks**

c. What are the key differences between formative and summative evaluations in HCI? **6 Marks**

d. What is the purpose of evaluation in the field of Human-Computer interaction? **4 Marks**

QUESTION FIVE

a. Discuss the challenges and considerations in designing user interfaces that cater to diverse user groups with varying needs and abilities. How can HCI researchers and designers ensure inclusivity and accessibility?
12 Marks

b. Examine the evolving role of mobile and touch-based user interfaces in HCI. How do usability and usefulness differ in these contexts compared to traditional desktop interfaces? **8 Marks**