University of Eswatini
Department Of Computer Science
Main Examination December 2019

Title of paper   : Human Computer Interaction

Course number   : CSC251

Time Allowed   : Three (3) hours

Instructions:

- Each question carries 25 marks.

- Answer any four (4) questions.

This paper may not be opened until permission has been granted by the invigilator.

QUESTION 1

a) What is HCI? Who is involved in HCI? **[6]**

b) What are mental models, and why are they important in interface design? **[7]**

c) Explain the following terms. **[12]**

    i)   Reasoning

    ii)   Short-term memory

    iii)   Digital paper

QUESTION 2

a) What is the basic architecture of a computer system? **[5]**

b) Explain details about different types of text entry devices. **[10]**

c) Discuss and argue about why Human computer Interaction (HCI) is important with reference to the way in which technology has developed during past couple of years. **[10]**

QUESTION 3

a) Explain the Principles of user interface design. **[5]**

b) What is the interface design process and discuss a variety of attributes thathave an important influence on interface and screen design? **[10]**

c) Describe briefly four different interaction styles used to accommodate the dialog between user and computer. **[10]**

QUESTION 4

a) What is evaluation?What are the factors governing the choice of an appropriate evaluation method for different interactivesystems? Give brief details. **[7]**

b) How do 'golden rules' and heuristics help interface designers take account of cognitive psychology? Illustrate your answer with examples. **[8]**

c) Describe some of the different approaches to providing user support systems, with examples. **[10]**

QUESTION 5

User-centered system design is about focusing on the needs of the user as a way to inform design. It's a broad goal about supporting the entire range of computer users. GOMS as an analysis technique helps us in evaluating a design with respect to a user. However, GOMS is not as broad as user-centered system design.

a) Describe where GOMS is appropriate in a user-centered design process, and where it isn't appropriate. **[9]**

b) Pick another analysis method that can be used where GOMS could in a design process and which covers at least some of the situations where GOMS is inappropriate. Describe why your chosen method covers non-GOMS situations.

[12]

c) Does your method overlap with GOMS -- can they both be used for some design situations? Does GOMS and your chosen method cover the entire space of designs which you might want to analyze in a user-centered process? **[4]**

End of Question Paper