



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2011/2012 SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE (COMPUTER SCIENCE)

SCS 415: HUMAN COMPUTER INTERACTION

DATE: TUESDAY, 17TH APRIL 2012

TIME: 8.00 A.M. – 10.00 A.M.

INSTRUCTIONS

Answer question one and any two other questions

QUESTION ONE (30 MARKS)

- (a) Define the following terms in the context of human computer interaction
- (i). Prototype
 - (ii). Interaction
 - (iii). Domain
 - (iv). Task
- (4marks)
- (b)
- (i.) Usability of an interactive device is crucial goal in HCI design. Explain the term usability and its importance. Outline four usability attributes
- (8marks)
- (ii.) List six interactive products in use today that must be designed with usability in mind
- (3marks)
- (iii.) Explain five factors that affect usability of interactive systems
- (5marks)
- (c) Discuss the following Computer user interface:
- (i). GUI interfaces.
 - (ii). WIMP Interfaces
 - (iii). Menu
 - (iv). Command
- (6marks)
- (d) List six disciplines contributing to the HCI
- (6marks)

QUESTION TWO (20 MARKS)

- (a). Briefly explain why it is important to choose an appropriate font and point size when designing interactive software and any associated documentation.
- (4 marks)
- (b). Requirements gathering is an important activity that is always carried out in HCI

- (i). Define the term requirements gathering as learned in HCI
(2 marks)
- (ii). Explain the main purpose of carrying out requirements gathering
(6 marks)
- (iii). Briefly explain the Usability requirement as used when considering the requirements of a system in requirements gathering
(2 marks)
- (c). Give two differences between a user's and a designer's mental model of an interactive system.
(6 marks)

QUESTION THREE (20 MARKS)

- (a). Input and output devices are important when designing interfaces, explain the factors considered when deciding on an Input / Output device to be used
(10 marks)
- (b). How does Task Analysis help with the design of user interface
(6 marks)
- (c). Briefly describe how the social knowledge of human behaviour helps improve the design of interfaces in HCI.
(4 marks)

QUESTION FOUR (20 MARKS)

- (a). The designers of interactive systems are required to have diverse expertise in diverse fields for effective design of usable systems. Explain the relevance of the designers' knowledge and expertise in the following areas:
 - (i). Ergonomics
 - (ii). Sociology
 - (iii). Computer Science
 - (iv). Technical writing
 - (v). Business
(10marks)
- (b). The acquisition of conceptual model of a product is fundamental for successful and effective use of a product. Discuss the strategies that can be adopted to facilitate this process citing the features that should be inherent in conceptual models to simplify its use.
(10marks)

QUESTION FIVE (20 MARKS)

- (a). Identify and explain two major differences by which a user communicates with a computerized system.
(10 marks)
- (b). Describe two situations where you would not use a menu in an interface.
(4 marks)
- (c). Name two differences between short and long term memory.
(6 marks)