



(Knowledge for Development)

KIBABII UNIVERSITY COLLEGE

**A CONSTITUENT COLLEGE OF
MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY**

UNIVERSITY EXAMINATIONS

2014/2015 ACADEMIC YEAR

FOURTH YEAR SECOND SEMESTER

MAIN EXAMINATION

FOR THE DEGREE OF COMP SCIENCE

COURSE CODE: CSC 422

COURSE TITLE: HUMAN COMPUTER INTERACTION

DATE: 7TH MAY, 2015

TIME 8.00-10.00AM

INSTRUCTIONS TO CANDIDATES

Answer Question One in Section A and Any other **TWO** (2) Questions in Section B

SECTION A (30 MARKS)

Question 1 (30 MARKS)

- a) What is the distinction between a process-oriented and a structure-oriented design rationale technique? [6 MKS]
- b) User-centered design (UCD) is a process in which the needs and restrictions of end users of a product are given far-reaching attention at each stage of the design process. UCD models and approaches have been developed to assist in the design process. Explain these models. [6 MKS]
- c) Explain what we are likely to see in future Human- Computer interfaces. [6 MKS]
- d) What new paradigms do you think may be significant in the future of interactive computing? [6 MKS]
- e) The **ISO** standard describes 6 key principles that will ensure a design is user centered: Explain them. [6 MKS]

SECTION B – Answer any two Questions.

QUESTION 2 (20 Mks)

- a) What factors are expected to interrupt the extensive use of video in interfaces? What applications could gain most from its use?[6 MKS]
- b) There are many professionals who have defined how to design a good user interface. Shneiderman defined 8 Golden Rules. Explain them. [8 MKS]
- c) Human-computer interaction is affected by the forces shaping the nature of future computing. Explain these forces. [8 MKS]

Question 3 (20 Mks)

- a) A common creed of human-computer interface designers is "Know the User". The motivation of this tutorial is that there may large numbers of potential users that the designer does not know, and may not normally take into account when designing a system. Those users are people often identified as having "special" needs. There is an increasing level of recognition that those needs must be met in the design of interfaces. Describe some of the possible approaches to meeting them. [10 Mks]
- b) There are many factors that interact with each other in HCI, making the analysis complex. Explain these factors. [10 Mks]

Question 4 (20 Mks)

- a) Explain the elements of user interface design. [4 Mks]
- b) Give six Norman's principles of user interface design. [6 Mks]
- c) Explain the loop of interaction. [10 Mks]

Question 5 (20 Mks)

- a) Explain the concept of availability as related to user support issues. [5 Mks]
- b) Explain the various approaches to task analysis. [5 Mks]
- c) Explain the ways in which a full-page word processor is or is not a direct manipulation interface for editing a document using Shneiderman's criteria. [10 Mks]