



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2010/2011
FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE
SCE 502: HUMAN COMPUTER INTERACTIONS

DATE: Thursday 2nd December, 2010

TIME: 8.00 a.m. – 10.00 a.m.

INSTRUCTIONS

Answer Question One and any other TWO.

QUESTION ONE

- a. Define the term “Human Computer Interaction (HCI)”. 2 marks
- b. Describe the following types of models as they apply to HCI :
 - i. Mental
 - ii. Conceptual Models 6 marks
- c. Discuss the three common types of user interfaces used in HCI. 6 marks
- d. Define the following terms as used in HCI:
 - i. Universal design
 - ii. Metaphors
 - iii. Accessibility 6 marks
- e. There are guidelines for general Accessible Design of user interfaces. Explain guidelines for the following:
 - i. Use of text
 - ii. Voice user interfaces
 - iii. Synthesized speech 10marks

QUESTION TWO

- a. Discuss the four accessibility sensory barriers and explain how HCI tries to address them. 8 marks
- b. When considering Accessibility Design Guidelines, there are issues to keep in mind about users. Explain four such issues. 4 marks
- c. State any four guidelines concerning colour suggested by RNIB(Royal National Institute for the Blind) . 2 marks
- d. Discuss Personal Assistive Technologies under the following sub-headings:
 - i. Output devices
 - ii. Input devices 6 marks

QUESTION 3

- a. When designing user interface for an International or Multicultural Audience, there are issues the interface designer need to be concerned about. Explain such three areas of concern. 3 marks
- b. Explain any four attributes that contribute to usability of a system. 4 marks
- c. Simple designs of Graphical User Interfaces provide both aesthetic and functional benefits. Explain four such benefits. 4 marks
- d. Describe the following three methods of simplifying the design of a Graphical User Interfaces:
 - i. Reduction
 - ii. Regularisation
 - iii. Leverage 9 marks

QUESTION 4

- a. Explain the following visual variables related to the design of Graphical user Interfaces:
 - i. Scale
 - ii. Contrast
 - iii. Proportion 6 marks

- b. Explain “Perceptual Organisation and Visual Structure” as they relate to the design of Graphical user interface. 2 marks
- c. Discuss the following four essential techniques that can be applied to appropriately structure the interface:
- i. Symmetry
 - ii. Alignment
 - iii. Optical Adjustment
 - iv. White Space
- 8 marks
- d. Discuss the concept of Grid-based design of programs. 4 marks

QUESTION 5

- a. Define the following terms as they relate to colour:
- i. Hue
 - ii. Saturation
 - iii. Value
- 6 marks
- b. Explain the following terms as they apply to Graphical User Interfaces:
- i. WIMP
 - ii. widgets
 - iii. window
- 3 marks
- c. Describe the following types of windows:
- i. Parent window
 - ii. Child windows
 - iii. Dialog windows
- 6 marks
- d. Explain the importance of the Menu System in the Graphical User Interfaces. 5 marks