



(*Knowledge for Development*)
KIBABII UNIVERSITY

**UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR**

SPECIAL/SUPPLEMENTARY EXAMINATIONS

YEAR THREE SEMESTER TWO EXAMINATIONS

**FOR THE DEGREE OF
BACHELOR OF SCIENCE COMPUTER SCIENCE**

**COURSE CODE : CSC 323
COURSE TITLE : HUMAN COMPUTER
INTERACTION**

DATE: 09/08/2023

TIME: 2.00PM-4.00PM

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO

COM 323: HUMAN COMPUTER INTERACTION

STREAM: COM

DURATION: 2 Hours

INSTRUCTION TO CANDIDATES

Answer **ALL** questions from section A and any **TWO** from section B.

SECTION A [30 MARKS] ANSWER ALL QUESTIONS.

QUESTION ONE

[30 MARKS]

a) Explain each of the following terms as used in HCI:

i. Flexibility; (2 marks)

ii. Affordance. (2 marks)

b) John, a system analyst designed a human computer interface for a system. Explain **three** goals of this interface. (6 marks)

c) A newly established supermarket would like to design a human computer interface for its inventory control system.

i. Outline four metaphors that could be used during the design. (4 marks)

ii. Describe **three** design principles the supermarket could apply. (6 marks)

d) i With the aid of appropriate examples, explain the acronym WIMPS as used in human computer interaction. (4 marks)

ii Usability is at the core of Human Computer Interaction. Describe **six** indicators of a system which has high usability. (6 marks)

QUESTION TWO

[20 MARKS]

a) Outline **three** types of individual differences that a system designer would consider when designing a human computer interface. (3 marks)

b) Explain each of the following terms as used in human computer interaction:

i. External consistency; (2 marks)

ii. Usability engineering; (2 marks)

iii. Universal design. (2 marks)

c) Mosh Hospital has implemented a new human computer interface. Outline **five** general guidelines that the hospital could have considered when creating the interface. (5 marks)

d) Peter is a visually challenged student in a local university that does most of its communication through the student portal. Describe **three** aids the university could have included in the portal to enable him use the system comfortably. (6 marks)

QUESTION THREE

[20 MARKS]

- a) i Outline **two** challenges of speech recognition as a human computer interface. (2 marks)
ii Describe **two** methods used to ease reading of numbers in a computer. (4 marks)
- b) i Explain the term cognition as used in human computer interface. (2 marks)
ii Describe **three** ways through which cognition improves human computer interaction. (6 marks)
- c) Students at Kibabii University have been complaining about the performance of their portal.
d) Describe **three** methods that could be used to evaluate the portal. (6 marks)

QUESTION FOUR

[20 MARKS]

- a) Outline **four** factors considered when selecting an interaction style. (4 marks)
- b) Distinguish between *command based* and *form fill* user interfaces. (4 marks)
- c) A student management information system uses a menu-based user interface. Explain **three** types of menus that could be incorporated in the system. (6 marks)
- d) i Explain the term *fit* as used in human computer interaction. (2 marks)
ii A system analyst carried out a task analysis in order to design a user interface. Explain **two** types of this analysis. (4 marks)

QUESTION FIVE

[20 MARKS]

- a) Outline **four** professionals who could work together to create a good user interface. (4 marks)
- b) Many users of system prefer to select options rather than type the information.
(i) Outline **three** reasons that could have led to this preference. (3 marks)
(ii) Explain **two** limitations of such a system. (4 marks)
- c) Differentiate between *perception* and *representation* as used in human computer interaction. (4 marks)
- d) With the aid of a well labeled diagram, illustrate the Don Norman's model of interaction. (5 marks)