



# **MURANG'A UNIVERSITY OF TECHNOLOGY**

## **SCHOOL OF COMPUTING INFORMATION AND INFORMATION TECHNOLOGY**

DEPARTMENT OF COMPUTER SCIENCE

UNIVERSITY ORDINARY EXAMINATION

2023/2024 ACADEMIC YEAR

**FOURTH YEAR FIRST SEMESTER EXAMINATION BACHELOR OF  
SCIENCE IN COMPUTER SCIENCE**

SCS 407 – USER INTERFACE DESIGN

DURATION: 2 HOURS

### **INSTRUCTIONS TO CANDIDATES:**

1. Answer Question One and Any other TWO questions
2. Mobile phones are not allowed in the examination room.
3. You are not allowed to write on this examination question paper.

## **SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION**

### **QUESTION ONE (30 MARKS)**

- (a) Trace the historical development of HCI, from the early command-line interface to today's natural language and touch based interactions. How has user expectations and experiences evolved over time? (10 marks)
- (b) Explain the core principles of user interface design. How do these principles contribute to a positive user experience? (10 marks)
- (c) Compare and contrast the characteristics and applications of direct manipulation and command-driven interactions styles. What are the advantages and disadvantages of each and in what context are they most suitable? (10 marks)

## **ANSWER ANY TWO QUESTIONS IN THIS SECTION**

### **QUESTION TWO (20 MARKS)**

- (a) Discuss the key principles and stages of the interactive system design process. How do these principles contribute to the development of user-friendly and efficient system? (10 marks)
- (b) Analyze the potential pitfalls of relying too heavily on trends in UI design. How can the following design trends impact the long-term usability and effectiveness of user interface, and what are the strategies to balance trendiness with user-centred design. (10 marks)

### **QUESTION THREE (20 MARKS)**

- (a) Discuss the ten principles of Nielsen serve as a checklist in evaluating and explaining problem for heuristic evaluator interface or product. (10 marks)
- (b) It has been said that computers, smartphones and tablets are in a design race for dominance, increasingly the Apple desk machines resemble the agility of the ipad and iphone software. Windows has aligned phone; tablets and its new pc operating system (windows 8) to look much alike. Discuss design, functionality and portability for user interface design. Use examples. (10 marks)

### **QUESTION FOUR (20 MARKS)**

- (a) With help of diagrams where possible, discuss various models in software engineering for interactive design. (10 marks)
- (b) Discuss various reasons why in private direct manipulation of all screen objects and actions may not be feasible. (10 marks)