



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS**

**DEPARTMENT OF COMPUTER SCIENCE & SOFTWARE ENGINEERING**

**UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION ARTS**

**WITH IT**

**4<sup>TH</sup> YEAR 2<sup>ND</sup> SEMESTER 2016/2017 ACADEMIC YEAR**

**MAIN CAMPUS**

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**COURSE CODE: SCS 416**

**COURSE TITLE: HUMAN COMPUTER INTERACTION**

**EXAM VENUE: LAB 13**

**STREAM: BBA**

**DATE: 19/12/16**

**EXAM SESSION: 9.00 – 11.00 AM**

**TIME: 2 HOURS**

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### **INSTRUCTIONS**

- 1. Answer Question 1 (Compulsory) and ANY other TWO questions**
- 2. Candidates are advised not to write on the question paper**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**

### **QUESTION 1 [30 MARKS]**

- a) Give a comprehensive definition of the term Human Computer Interaction [HCI], according to the Association for Computing Machinery (ACM) (5mks)
- b) Highlight four techniques on the human side and four techniques on the machine side that facilitate Human Computer Interaction. (8mks)
- c) Discuss any two classic examples of problems that occur as a result of poorly designed human-machine interfaces. (6mks)
- c) Which fundamental characteristics must always be considered when viewing links in WebPages? (5mks)
- d) Illustrate how HCI differs from human factors and ergonomics. (6mks)

### **QUESTION 2 [20 MARKS]**

- a) Give a short description of the concept of 'cooperative evaluation' and its usage in HCI (5mks)
- b) Enumerate any five of the 13 principles of display design according to Christopher Wickens et al. (10mks)
- c) Give a short description of the 'cognitive walkthrough' evaluation technique. (5mks)

### **QUESTION 3 [20 MARKS]**

- a) Briefly discuss the field of study of ergonomics and specify its relation to HCI. (10mks)
- b) Discuss briefly the concept of metaphor and its usage in interactive systems. Give an example. (5mks)
- b) Explain what is meant by "storyboard" and give an example of how it can be used. (5mks)

### **QUESTION 4 [20 MARKS]**

- a) Dependent and independent variables are defined in the controlled experiment framework. Explain the difference between the two and provide an example. (10mks)
- b) You are at an early stage in the design of an invoicing management system for milk wholesaler. Choose the appropriate evaluation method and explain your choice, specifying users to be involved, the tasks to evaluate, and significant measures. (10mks)

### **QUESTION 5 [20 MARKS]**

- a) Discuss briefly different type of users (direct and indirect) to be taken into consideration in interactive systems design. (10mks)
- b) Explain what is meant by cognitive model and highlight its main characteristics. (10mks)