



THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

A. M. E. C. E. A

MAIN EXAMINATION

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AUGUST – DECEMBER 2018 TRIMESTER

FACULTY OF SCIENCE

DEPARTMENT OF COMPUTER AND LIBRARY SCIENCE

REGULAR PROGRAMME

CMT 316: HUMAN COMPUTER INTERFACE

Date: DECEMBER 2018

Duration: 2 Hours

INSTRUCTIONS: Answer Question ONE and any other TWO Questions

- Q1. a) Define the following terms explaining their meaning
- i) HCI [2 marks]
 - ii) Usability [2 marks]
 - iii) Cognitive Psychology [2 marks]
 - iv) Visual Acuity [2 marks]
 - v) Chunking [2 marks]
 - vi) Ergonomics [2 marks]
- b) Describe the **two** types of mechanoreceptors which respond to different kinds of pressure [4 marks]
- c) The sensory memories in humans act as buffers for stimuli received through the senses, mention briefly the types of sensory memory [3 Marks]
- d) Describe the **two** kinds of Long term Memory in human beings [4 Marks]

- e) What is a **WIMP** interface? [2 marks]
- f) Describe in full the **WYSIWYG** paradigm, citing an example [5 marks]
- Q2. a) Describe Ubiquitous computing [2 marks]
- b) What are scenarios in HCI, give one example [2 marks]
- c) Using appropriate diagrams, explain the interaction design process [10 marks]
- d) Explain the **three** main approaches to prototyping? [6 marks]
- Q3. a) Explain briefly the **three** main principles that support usability? [6 marks]
- b) What are the **three** main goals of evaluation? [6 Marks]
- c) Identify at least **eight** factors that distinguish different evaluation techniques and therefore help us to make an appropriate choice [8 Marks]
- Q4. a) Discuss the reasons why HCI attracts great deal of attention in software development [4 Marks]
- b) Interaction styles determine power and ease for the use. List down and briefly discuss **five** interaction styles [8 Marks]
- c) Discuss pertinent human uses that must be considered during HCI design [6 Marks]
- d) Briefly explain the **two** main types of query techniques [2 Marks]
- Q5. a) A university student registration system requires that the student provide the following information
- Student Details
First Name, Second Name, Last Name, ID Number, Date of Birth, Age, Contact Address and Gender
- Guardian Details
Father's Name, ID Number, Occupation, Tel Number, Email Account

Mother's Name, ID Number, Occupation, Tel Number, Email Account

Number of sisters and brothers

Position in the family (first born, last born, etc.)

Course Program Details: Faculty, Department, Course, Year, Semester, Course Units

- i) Draw a well-labeled offline design of a user interface that can enable the student to provide the above information. Your design should be based on user interface design guidelines, and should have features to make as usable as possible **[12 Marks]**
- ii) In view of the offline design that design: above, discuss more interface usability features that can only be possible with online design **[8 Marks]**

END