



THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

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MAIN EXAMINATION

JANUARY – APRIL 2019 TRIMESTER

FACULTY OF SCIENCE

DEPARTMENT OF COMPUTER AND LIBRARY SCIENCE

REGULAR PROGRAMME

CMT 316: HUMAN COMPUTER INTERFACE

Date: APRIL 2019

Duration: 2 Hours

INSTRUCTIONS: Answer Question ONE and any other TWO Questions

Q1. a) Define the following terms explaining their meaning

i) Usability [2 Marks]

ii) Ubiquitous computing [2 Marks]

iii) Visual Acuity [2 Marks]

iv) Size Constancy [2 Marks]

v) Ergonomics [2 Marks]

b) Describe the two types of mechanoreceptors which respond to different kinds of pressure [4 Marks]

c) Describe the two kinds of Long term Memory in human beings [4 Marks]

- d) What is a WIMP interface? **[2Marks]**
- e) Describe in full the WYSIWYG paradigm, citing an example **[4 Marks]**
- f) The sensory memories in humans act as buffers for stimuli received through the senses, mention briefly the types of sensory memory **[6 Marks]**
- Q2. a) What are scenarios in HCI, give one example **[2 Marks]**
- b) Briefly explain the two main types of query techniques **[4 Marks]**
- c) Discuss at least four pertinent human uses that must be considered during HCI design **[8 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? **[6Marks]**
- c) Interaction styles determine power and ease for the user. List down and briefly discuss four interaction styles **[8 Marks]**
- Q4. a) Discuss the reasons why HCI attracts great deal of attention in software development **[4 Marks]**
- b) Identify at least eight factors that distinguish different evaluation techniques and therefore help us to make an appropriate choice **[8 Marks]**
- d) Using appropriate diagrams, explain the interaction design process **[8 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 guideline, 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