



# THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

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**MAIN EXAMINATION**

**JANUARY – APRIL 2020 TRIMESTER**

**FACULTY OF SCIENCE**

**DEPARTMENT OF COMPUTER AND LIBRARY SCIENCE**

**REGULAR PROGRAMME**

**CMT 316: HUMAN COMPUTER INTERFACE**

**Date: APRIL 2020**

**Duration: 2 Hours**

**INSTRUCTIONS: Answer Question ONE and any other TWO Questions**

Q1. a) Explain the following terms as used in Human Computer Interaction

i) Visual Acuity **(2 Marks)**

ii) Size Constancy **(2 Marks)**

iii) Usability **(2 Marks)**

iv) Chunking **(2 marks)**

v) Ergonomics **(2 Marks)**

b) Explain the meaning of a WIMP interface in HCI? **(2 Marks)**

c) Explain briefly the **two** types of mechanoreceptors that respond to different kinds of pressure **(4 Marks)**

d) There are **two** kinds of Long term Memory in human beings, briefly describe them **(4 Marks)**

e) The paradigm WYSIWYG has a meaning, explain 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 and their use **(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) 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)**
- Q4. a) Explain briefly the **three** main principles that support usability? **(6 Marks)**
- b) What are the **three** main goals of evaluation in HCI? **(6 Marks)**
- c) Interaction styles determine power and ease for the user. List down and briefly discuss **four** interaction styles **(8 Marks)**

- Q5. a) Discuss the reasons why HCI attracts great deal of attention in software development **(4 Marks)**
- b) Using appropriate diagrams, explain the interaction design process **(8 Marks)**
- c) Identify at least **eight** factors that distinguish different HCI evaluation Techniques and therefore help us to make an appropriate choice **(8 Marks)**

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