



# **MURANGA UNIVERSITY COLLEGE**

(A constituent College of Jomo Kenyatta University of Agriculture & Technology)

**MAIN CAMPUS**

**ORDINARY UNIVERSITY EXAMINATIONS**

**2015/2016 ACADEMIC YEAR**

**FOURTH YEAR FIRST SEMESTER EXAMINATIONS**

**FOR THE DEGREE**

**OF**

**BACHELOR OF BUSINESS INFORMATION TECHNOLOGY**

**COURSE CODE: HBT2402**

**COURSE TITLE: HUMAN COMPUTER INTERACTION**

**DATE: 15<sup>TH</sup> DECEMBER, 2015**

**TIME: Two Hours**

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## **INSTRUCTIONS TO CANDIDATES**

Answer Question ONE (1) and **any** other TWO Questions

MRUC observes ZERO tolerance to examination irregularities

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**QUESTION ONE (COMPULSORY)**

- a) In order to produce computer systems with good usability, developers must perform correct task analysis. Describe the **GOMS** method of cognitive task analysis used in Human Computer Interaction. [4 marks]
- b) The CATWOE criteria contain the elements considered when formulating definitions of a desired system. Identify the **CATWOE** elements in the project of automating the library system of Muranga University. [6 marks]
- c) Using an example, describe the meaning of *Visibility* and *Affordance* and state how each can be achieved in a computer system. [6 marks]
- d) Usability engineering (**UE**) is a systematic approach to making software easier to Use and Learn. Describe the usability engineering lifecycle. [10 marks]
- e) An understanding of the way humans perceive visual information is important in the design of visual displays in computer systems. With an example for each, differentiate between **constructivist** and **ecological** theories of perception in a computer system. [4 marks]

**QUESTION TWO**

- a) It is important for web sites users to know what objects on the page can be clicked to follow links.
- i) Describe the concept of link affordance with respect to a website. [2 marks]
- ii) Briefly explain four (**4**) guidelines which can be used to improve affordance on links found on a website. [8 marks]
- b) Explain four (**4**) different functions about how Icons can be used in interfaces. [4 marks]
- c) Outline six (**6**) guidelines used to ensure that commands in a computer system become meaningful to the user. [6 marks]

**QUESTION THREE**

- a) The Gestalt approach which is a constructivist emphasizes that we perceive objects as well organized patterns rather than separate component parts has great emphasize on grouping. Describe the four (**4**) main factors that determine the idea of grouping so as to interpret a visual field. [8 marks]
- b) When simple issues in software require labels or instructions, the design is bad. Explain the four (**4**) actions afforded by common user interface controls. [4 marks]
- ci) Explain the concept of meaningfulness with respect to a computer system. [2 marks]

ii) Describe the three (3) factors which determine the meaningfulness of items in interfaces which use commands and in the interfaces which use icons. [ 6 marks]

#### **QUESTION FOUR**

ai) With an example in computer systems, explain the principle of **Gulf of Execution**. [4 marks]

ii) Explain how the Gulf of Execution can be **bridged**. [4 marks]

b) Systems should be designed to help users form the correct productive mental models. Outline six (6) factors which should be included in common system design methods. [12 marks]