MAASAI MARA UNIVERSITY

UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR
MAIN EXAMINATION

SCHOOL OF SCIENCE AND INFORMATION SCIENCES
DEPARTMENT OF COMPUTING AND INFORMATION SCIENCES
THIRD YEAR SECOND SEMESTER EXAMINATION
FOR DEGREE IN INFORMATION SCIENCES

COURSE CODE: COM - 431
COURSE TITLE: HUMAN COMPUTER INTERACTION

DATE: 17TH APRIL 2019   **TIME: 0830 - 1030HRS**

INSTRUCTIONS TO CANDIDATES

i. Question ONE in section A is compulsory
ii. Answer any Two (2) Questions from section B
iii. Use diagrams, example and illustration where necessary
iv. All questions in section B have equal marks

This paper consists of 3 printed pages. Please turn over.

SECTION A (COMPULSORY – 30 MARKS)

QUESTION ONE

a) Briefly explain how the following interface work
   i. Direct manipulation interface   [2 marks]
   ii. Natural language interface   [2 marks]
b) Describe the difference in conceptualization and approach between Software Engineering process and HCI design process
                                                         [5 Marks]
c) Briefly explain how the following guidelines for design interface
   i. Naturalness   [2 marks]
   ii. Non- Redundancy   [2 marks]
   iii. Supportiveness   [2 Marks]
d) describe the steps for building a Key Stroke Level Model under GOMS   [4 Marks]
e) Define the meaning of the following terms
   i. Gulf of Execution   [2 marks]
   ii. Gulf of Evaluation   [2 Marks]
f) Explain the meaning of the following of the following terms
   i. Usability   [4 Marks]
   ii. User experience   [4 Marks]
g) Explain the meaning of external cognition (also called external externalization) and annotation as two techniques associated with memory load. Explain how each can be applied to reduce memory load user
                     [3 Marks]

SECTION B (ANSWER ANY TWO (2) QUESTIONS – 40 MARKS)

QUESTION TWO [20 MARKS]

a) What are the design principles with respect to interaction design
[2 Marks]

b) Explain the application of the following design principles:
   i.   Visibility   [1 mark]
   ii. Feedback   [1 mark]
   iii. Constraints   [1 mark]
   iv. Mapping   [1 mark]
   v.   Affordance   [1 mark]

c) A politician captaining for the next general election has asked you to prepare a personal website for him to profile him and market him to the public
   i.   Explain how you would apply paper based prototypes to design the website.
        [3 marks]
   ii. Explain with examples how you would implement any four features you would introduce so as to attract the attention of the visitors to the crucial aspects of the content, while not maintaining a good presentation of the rest of the content
        [4 Marks]

d) Discuss the Three key points for designing good dialog
   [6 Marks]

QUESTION THREE [20 MARKS]

a) Discuss any three types of feedback
   [6 Marks]

b) List eight ways for achieving the goal of minimal operator action when designing a user interface.
   [4 marks]

c) Outline four practical ways that an analyst can improve the ease of user navigation and the stickiness of an ecommerce Web site.
   [4 Marks]

d) What are hypertext links? Where should they be used?
   [3 Marks]

e) Describe the term "Mashup"   [2 marks]

f) What are the design principles with respect to interaction design
                                    [1 mark]

QUESTION FOUR [20 MARKS]

a) Discuss the appropriateness or otherwise of the following techniques gaining an understanding of needs of ALL stakeholders
  i.   Task Scenario description   [2 marks]
  ii.   Persona analysis   [2 marks]
  iii. Low- fidelity prototypes   [2 marks]

b) Usability in HCI is considered a psychological, technical as well as social issue. Discuss with examples where necessary, why this statement holds true
                                    [4 Marks]

c) From purely theoretical point, why Ethnography an invaluable tool in HCI design.
        [3 Marks]

d) What key principles to guide evaluation of HCI design process
                                                        [4 marks]

e) What are steps recommend by Shneiderman for building correct tasks hierarchies by designers for systems   [3 marks]

//END