JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS

UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR SCIENCE IN INFORMATION AND COMMUNICATION TECHNOLOGY

3RDYEAR 1ST SEMESTER 2018/2019 ACADEMIC YEAR

MAIN CAMPUS

COURSE CODE: ICT 3315

COURSE TITLE: HUMAN COMPUTER INTERACTION

EXAM VENUE: **STREAM:**

**DATE: Dec 2018**   **EXAM SESSION:**

TIME: 2.00 HOURS

INSTRUCTIONS:

1. Answer Question 1 (Compulsory) and ANY other two questions
2. Candidates are advised not to write on the question paper
3. Candidates must hand in their answer booklets to the invigilator while in the examination room

QUESTION ONE [30 MARKS]

    a)   State *any four* of the *eight golden* rules of interface design.   **(4 marks)**

    b) The figure bellow shows the activities in HCI Design, briefly describe each activity and its relevance in the forming the stage of the next phase   **(4 marks)**
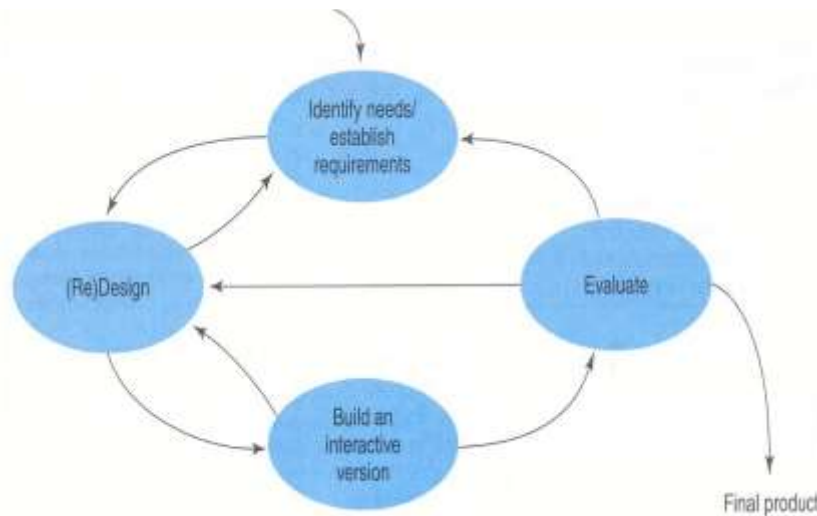
a) Explain any three reasons why there is need to evaluate interfaces and Computer systems before being rolled out to the users   **(6 marks)**

b) List and explain six components of Norman's Design Principles   **(6 marks)**

c) Command and natural languages are important considerations in user interface design. Discuss at least *five basic goals* of language design   **(10 marks)**

QUESTION TWO [20 MARKS]

a) The primary goal for menu, form fill-in, and dialog-box designers is to create a sensible, comprehensible, memorable, and convenient organization relevant to the user's task. Describe at least *six* types of single menus used in user interface design.   **(6 marks)**

b) Discuss the main contributions from the following disciplines to the study of HCI?

        i.   Cognitive psychology   **(2 marks)**

        ii.   Social and organization psychology   **(2 marks)**

        iii.   Ergonomics factors   **(2 marks)**

c) Define Conceptual Models and state the steps for developing a conceptual models   **(4 marks)**

d) Designers of user interfaces place a lot of emphasis on positive feelings associated with a good user interface. Discuss any *four* positive feelings associated with a good user interface?   **(4 marks)**

QUESTION THREE [20 MARKS]

a) The following figures are extracts of **interaction** style. Identify , discuss the features and the suitability of these interfaces for usability in the computer systems   (8 **marks)**

```
PAYMENT  DETAILS                    P3-7

please  select  payment  method:
   1.  cash
   2.  check
   3.  credit  card
   4.  invoice

   9.  abort  transaction
```

(a)

```
sable.soc.staffs.ac.uk> javac HelloWorldApp
javac: invalid argument: HelloWorldApp
use: javac [-g][-O][-classpath path][-d dir] file.java…
sable.soc.staffs.ac.uk> javac HelloWorldApp.java
sable.soc.staffs.ac.uk> java HelloWorldApp
Hello world!!
sable.soc.staffs.ac.uk>
```

(b)

b) Consider the two design principles "visibility" and "constraints". For each of the two, explain the principle and describe an example of it being used in a good design.   (4 **marks)**

c) State and explain any Two types of evaluation methods in HCI   **(4 marks)**

d) Explain the meaning of the following in regard to usability principles   **(4 marks)**

   i. Affordance

   ii. Mapping

QUESTION FOUR [20 MARKS]

a) Environmental factors can impair users' ability to recall information that is necessary to operate complex, computer systems. Briefly explain how such disruptions can impair both short-term AND long-term memory. **(6 Marks)**

b) Name the two types of evaluations and clearly explain each type. **(6 Marks)**

c) State the Norman's seven principles for transforming difficult tasks into simple ones **(6 Marks)**

d) What is HCI? **(2 Mark)**

QUESTION FIVE [20 MARKS]

a) Describe the differences between *expert-based* and *user-based* *usability* testing, discussing their *advantages* and *disadvantages*. **(4 marks)**

b) Usability requires project management and careful attention to requirements analysis and testing for clearly defined objectives. Discuss any *three goals* of requirement analysis. **(6 marks)**

c) List several reasons why certain people resist using computers (including smartphones) and suggest possible ways to you can alleviate these concerns. **(6 marks)**

d) Interaction design is an ITERATIVE Process, list at least five of the processes involved. **(4 marks)**