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**University Examinations 2014/2015**

THIRD YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF BUSINESS INFORMATION TECHNOLOGY

**BBT 2212: HUMAN COMPUTER APPLICATION**

**DATE: APRIL 2015 TIME:** $2 $**HOURS**

**INSTRUCTIONS:** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE (30 MARKS)**

1. Describe Norman’s “*execution –evaluation cycle*” interaction model. (4 Marks)
2. Differentiate the concepts of recognition and recall in HCI. (4 Marks)
3. Construct a HTA showing how you would organize a low cost weekend in Nanyuki.

( 4 Marks)

1. The focal point of Gestalt theory is the idea of “grouping”, or how we tend to interpret a visual field or problem in a certain way. Explain briefly the **four** main factors that determine grouping. (4 Marks)
2. Differentiate between the following HCI concepts:
3. Low-fidelity and High – fidelity prototypes. (2 Marks)
4. *“Afforadance”* and “visibility” (2 Marks)
5. Ruiru Golf Club wishes to introduce a new service to its customers for rooms booking for mobile phones users. As an IT consultant, you are asked to design this mobile interface for the hotel.
6. What techniques are you going to use and why? (4 Marks)
7. Provide a sketch of the main interface(s) of the mobile booking system.(6 Marks)

**QUESTION TWO(20 MARKS)**

1. Give a short description of the “cognitive walkthrough” evaluation technique using your own example. (4 Marks)
2. Discuss briefly the usage of metaphor in the design of interactive systems, highlighting any two advantages and disadvantages. (6 Marks)
3. Create a GOMS model of the activity of sending a fax. (4 Marks)
4. Speech interface normally include two technologies: automatic speech recognition and speech synthesis.
5. Why is speech technology so important in multimodal interaction design, even for normal users? (2 Marks)
6. Describe two possible advantages and disadvantages when designing a speech interactive system? (4 Marks)

**QUESTION THREE (20 MARKS)**

1. One of the system usability principles is *observability*. Discuss briefly what it means to develop a system which is “observable”. (3Marks)
2. Describe the lifecycle of software design according to the principles of user-centered design. (5 Marks)
3. Analysis of stakeholders is an important step for the usability design.
4. List four kind of aspects of the stakeholders we need to analyze before designing a system. (4 Marks)
5. Describe four reasons why stakeholder analysis is important for a system design.

 (4 Marks)

1. Use internet bank system as example to explain the categories of the stakeholders.

 (4 Marks)

**QUESTION FOUR (20 MARKS)**

1. Briefly describe the “thinking aloud” technique and its application. (3 Marks)
2. Discuss the concept of usability engineering. (4 Marks)
3. Describe the main characteristics of the keystroke-level model and present a possible application. (3 Marks)
4. Explain briefly any five Norman’s Principles for transforming difficult tasks into simple ones. (5 Marks)
5. Wilderness Resort Ltd accounts department is designing a database entry screen. The screen will display a form consisting of a large number of text boxes. The information to be entered will be in several categories, including personal details, account details and transaction information. Discuss ways in which the Gestalt Laws could be applied to enhance the usability of this screen. (5 Marks)

**QUESTION FIVE (20 MARKS)**

1. You have identified a market opportunity for home media players that would cater for older members of the population. Many older people have difficulty understanding the operating principles of devices such as MP3 players, ‘internet radios” for streaming audio, and personal video recorders and players.
2. Describe any three evaluation processes that could be used by a start-up company to improve the usability of such devices for this population. (6 Marks)
3. Describe the four principles of direct manipulation. (4 Marks)
4. Explain briefly any four of the Shneiderman’s Golden rules for dialogue design.(4 Marks)
5. Briefly explain the meaning of the following terms:
6. Group ware (1 Mark)
7. Fitts Law (1 Mark)
8. Computer supported cooperative work (1 Mark)
9. Discuss the differences among principles, guidelines and standards, giving at least one example of each. (3 Marks)