

PAN AFRICA CHRISTIAN UNIVERSITY

BACHELOR OF BUSINESS INFORMATION TECHNOLOGY

END OF SEMESTER EXAMINATION

DEPARTMENT: COMPUTING AND INFORMATION TECHNOLOGY

COURSE CODE: BIT209

COURSE TITLE: HUMAN COMPUTER INTERACTION

EXAM DATE: XXXX,AUGUST, 2019

TIME: XXXX

INSTRUCTIONS

- This exam script has **TWO (2)** sections.
- Read all questions carefully before attempting.
- Answer All questions in Section **A** and any other Three questions in Section **B**.
- Write only your **student number** on the answer booklet provided.
- None programmable calculator permitted
- Calculators on phones, tablets and computers are NOT permitted in Theory Papers

SECTION A
(Answer ALL questions in this section)

Question 1:

- a) Differentiate between the following terms as used in HCI: **[4 Marks]**
- i) Low-fidelity and High-fidelity prototypes
 - ii) Gulf of execution and Gulf of evaluation
- b) The process of interaction design involves four basic activities. Discuss. **[4 Marks]**
- c) Study the following diagram of Seeheim user interface architecture.

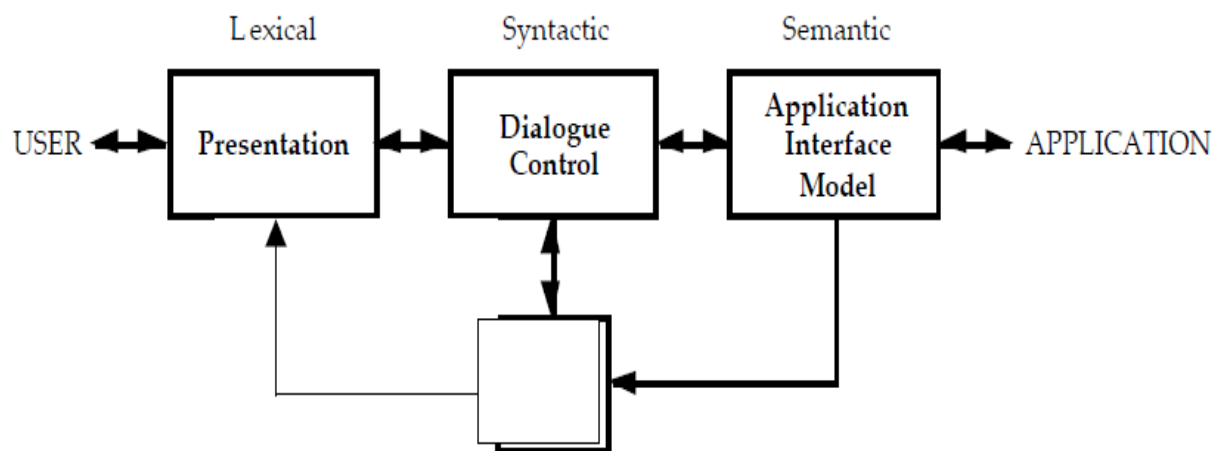


Figure 2.1 Seeheim model

- i) Describe the function of the three main boxes. **[3 Marks]**
- ii) The lower unlabelled box is called "the switch", define its importance. **[2 Marks]**
- d) State two benefits of developing a good user interface. **[2 Marks]**
- e) Outline any three Shneiderman's Golden Rules. **[3 Marks]**
- f) Explain two factors affecting user interface usability. **[4 Marks]**
- g) Cognition is the process by which we gain knowledge. Discuss any four processes that contribute to cognition. **[4 Marks]**
- h i) Explain the term direct manipulation as used in Human Computer Interaction. **[2 Marks]**

- ii) Direct manipulation interaction style describes systems that have certain features.
State such two core features. **[2 Marks]**

SECTION B
(Answer any THREE (3) questions in this section)

Question 2:

- a) State two disadvantages of Low-fidelity prototyping. **[2 Marks]**
- b) XYZ University 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. Highlight four ways in which the *Gestalt Laws of Perceptual Organization* is applied to enhance the usability of this screen. **[4 Marks]**

- c) There are many formalism techniques that we can use to signify dialogs. With aid of examples, explain two of these formalism techniques. **[4 Marks]**

Question 3:

- a) List any four Jacob Nielsen's Usability Heuristics principles for Commercial Web sites. **[4 Marks]**
- b) "A software tool is a programmatic software used to create, maintain, or otherwise support other programs and applications." Discuss three software tools commonly used in HCI. **[6 Marks]**

Question 4:

- a) One of the techniques used in the usability life cycle is task analysis.
- i) Explain the term task analysis. **[2 Marks]**
 - ii) Describe the concept of GOMS. **[4 Marks]**
- b) Elaborate suitability of the following interactive devices as applied in industry. **[4 Marks]**
- i) Track ball
 - ii) Graphics tablet

Question 5:

- a) With relevant examples, highlight three components of usability engineering.

[3 Marks]

b) Describe the stages of interaction in Donald Norman's model.

[7 Marks]

Question 6:

a) Evaluation is concerned with gathering data about the usability of a design or product by a specified group of users for a particular activity within a specified environment or work context. There are a wide range of methods which can be used for evaluation.

i) State three reasons for carrying out evaluation.

[3 Marks]

ii) Outline three factors that need to be considered when selecting an evaluation method.

[3 Marks]

iii) Explain two of these methods.

[4 Marks]

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