



College of Business Peace leadership and Governance

CSC 303 Human Computer Interaction

END OF FIRST SEMESTER EXAMINATIONS

NOVEMBER/DECEMBER 2018

LECTURER: MR.C.KWENDA

DURATION: (3 HRS)

INSTRUCTIONS

1. ANSWER ANY FOUR QUESTIONS

2. START EACH QUESTION ON A FRESH PAGE

QUESTION ONE

- a) Briefly describe three subcomponents of the human model processor by Card, Moran and Newell (1983) [6 marks]
- b) With regard to the human eye photoreceptors, explain in detail the variations that takes place when one moves from a poorly illuminated room to a highly illuminated one [4 marks]
- c) Write brief notes on the ability of eye to
 - I) Perceive size and depth [3 marks]
 - II) Perceive brightness [3 marks]
 - III) Perceive colour [3 marks]
- d) Briefly describe all parts and channels through which sound vibrations goes through until sound is pronouncedly amplified by the human inner ear [6 marks]

Question two

- a) With regard to the processing of sound briefly describe the following terms
 - I) Pitch [2 marks]
 - II) Loudness [2 marks]
 - III) Timbre [2 marks]
- b) Suggest ideas of an interface which use properties of sound effectively [6 marks]
- c) With an aid of a diagram briefly describe the interaction design process [9 marks]
- d) Differentiate Ergonomics from Human Computer Interaction [2 marks]
- e) Briefly describe any two ways in which users can interact with the computer systems [2 marks]

Question three

- a) Describe three populations of users with special needs. For each of these populations, suggest three ways current interfaces could be improved to better serve them [9 marks]
- b) Give two reasons why expert users may not prove to be a good source of information about the requirements of an interactive system [6 marks]
- c) What is meant by abduction? Give at least one example of abductive reasoning [3 marks]
- d) Norman's model of interaction is the most influential in Human-Computer Interaction because of its closeness to intuitive understanding of the interaction between human user and the computer. Briefly describe all the stages in the Norman's model of interaction [7 marks]

Question four

- a) Briefly describe any five factors that directly affect the quality of the interaction and user's performance [10 marks]
- b) Outline two advantages and two disadvantages of the following interaction styles
 - I) Command line interface
 - II) Natural Language
 - III) WIMP [12 marks]
- c) Differentiate between QWERTY keyboard and *DVORAK* keyboard [3 marks]

Question five

The screenshot shows a web browser window titled "Prescription Refill Service". The main heading is "PRESCRIPTION REFILL SERVICE". Below this, there are two input fields: "Your name:" and "Date: **". The "Date" field has a double asterisk indicating a required field. Below these fields is a large rectangular box containing the text "Prescription Refill Service". Inside this box, there is a label "Doctors Name:" followed by a text input field containing "Dr.". Below the doctor's name field is a label "Medicine Name:" followed by a dropdown menu. The dropdown menu is open, showing a list of medicines: Prozac, Claritan, Allegra D, Singulair, Propecia, Viagra, and Paxil. "Prozac" is currently selected. At the bottom left of the form, there is a note: "** Use MM/DD/YYYY". At the bottom right, there is a "Submit!" button with a small icon of a pill bottle next to it.

- a) Describe five things wrong with the interface. [5 marks]
- b) Name six Golden Rules that have been violated by this interface. Give a brief explanation of those rules. [12 marks]
- c) Describe the four principles of direct manipulation. [8 marks]

END OF EXAMINATION