


VII SEMESTER B.TECH. (INFORMATION TECHNOLOGY /
COMPUTER AND COMMUNICATION ENGINEERING)
END SEM EXAMINATIONS, DECEMBER 2018
SUBJECT: PROGRAM ELECTIVE VI - HUMAN COMPUTER INTERACTION [ICT 4010]
REVISED CREDIT SYSTEM
(01/12/2018)
Time: 3 Hours
MAX. MARKS: 50
Instructions to Candidates

- ❖ Answer **ALL** the questions.
- ❖ Missing data if any may be suitably assumed.

- 1A. What is the requirement for user support? Explain following user support techniques with advantages and disadvantages. 5
 - i) Online tutorial and documentation.
 - ii) Adaptive Help
- 1B. Most mobile phones in the market are not designed for elderly people to use. You are required to design one for elderly users who are over 70 to be able to use easily. What kind of methods will you use for requirement analysis? And Why? After the requirement analysis, you made some paper prototype and will evaluate the usability aspect of your design what kind of methods would you like to use? And Why? 3
- 1C. How does increasing reaction time decreases accuracy in the unskilled operator but not in the skilled operator with respect to moment? Explain with Fitt's law. 2
- 2A. One publication company would like to study how the text style, size and line space affect people's reading speed. Their books cover a big range of reader population from school children to elderly people. A lab experiment was carried out. The experimenters selected 3 different text styles, 4 different text sizes and 3 different line spaces to test. They divided the readers' age into four groups, 9 to 12, 20 to 40, 50 to 60 and 70 to 80. They got 8 subjects from each age group to participate in the study. The same length of texts (but with different stories) for each group were printed with different styles, text sizes and line spaces according to the test conditions and asked each subject to read them and their reading speed was recorded. Based on mentioned scenario, answers the following questions. 5
 - i) What are the hypotheses for this study?
 - ii). What are the independent variables and dependent variables?
 - iii) In this study, they used mixed within-group (subject) design and between-group (subject) design. Which part is within-subject design and which part is between-subject design?
- 2B. Discuss the possible benefits and disadvantages of exploiting the virtual reality in games market. Justify the suitable usage of such a technology in the Education field. 3
- 2C. Explain semantic network model of Long Term Memory (LTM) with a suitable example. Also, explain the usage of LTM. 2

- 3A. Choose an appropriate evaluation method for each of the following situations. In each case identify: (i) the participants (ii) the technique used (iii) representative tasks to be examined (iv) measurements that would be appropriate (v) an outline plan for carrying out the evaluation. 5
- i) You have prototype for flight reservation system to be used by clients to manage the reservation problems of flights and smooth conduction of boarding process.
- ii) You have developed a group decision support system for a tele medicine healthcare system.
- 3B. Do a keystroke-level analysis for opening up an application in a visual desktop interface using a mouse as the pointing device, comparing at least two different methods for performing the task. Repeat the exercise using a trackball. Consider how the analysis would differ for various positions of the trackball relative to the keyboard and for other pointing devices. [Hint: Consider opening application through double clicking on application icon using mouse and trackball]. 3
- 3C. What is perception? Write two appropriate differences of person-perception and self-perception. Write the type of perception for Figure Q3C. 2

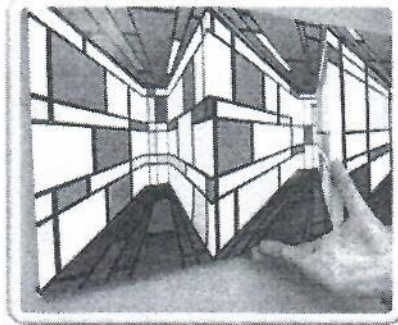


Figure Q.3C

- 4A. Explain any five Shneiderman's golden rules with a suitable example of each. 5
- 4B. Analysis of stakeholders is an important step for the usability design. What is a stakeholder? What kind of aspects of the stakeholders do we need to analyze before designing a system? Why is stakeholder analysis important for a system design? 3
- 4C. How the complexity of interactive system design will be reduced by the iteration & prototyping? 2
- 5A. What are different classifications of Groupware? Draw time/space matrix for Groupware? Explain with suitable example for each cell of matrix. 5
- 5B. Explain in detail following terminologies with an example. 3
- i) Context aware computing
- ii) Everyday computing
- iii) Pervasive computing
- 5C. You have been asked to compare user performance and preferences with two different learning systems, one using hypermedia, and the other sequential lessons. Design a questionnaire to find out what the users think of the system. Which comparison method will you use to identify user performance with these two systems? 2