



University of Kelaniya – Sri Lanka
Centre for Distance & Continuing Education
Bachelor of Science (General) External
Third Year First Semester Examination – 2019
2025 June
Faculty of Science

COST 36612 (R) – Human Computer Interaction

No. of Questions: **Four (04)**

No. of Pages: **Two (02)**

Time: **Two (02) Hours**

Answer **ALL** questions.

01.
 - a) Define the term “Human Computer Interaction”.
 - b) Describe the differences between the following terms using appropriate examples:
 - (i) Task
 - (ii) Goal
 - (iii) Action
 - c) In the context of Norman’s model of interaction, explain the following terms:
 - (i) Gulf of Execution
 - (ii) Gulf of Evaluation
 - d) What are the four steps (or translations) in the Interactive Cycle according to Norman’s Model of Interaction? Map these steps into the two main phases: the Gulf of Execution and the Gulf of Evaluation.
 - e) Briefly explain the key phases in the User-Centered Design Process.
02.
 - a) Describe the term needfinding in the User-Centered Design process. Briefly explain three common methods used in needfinding.
 - b) Draw or describe a Hierarchical Task Analysis (HTA) diagram for the task of withdrawing cash from an ATM.
 - c) Differentiate between throw-away prototype and evolutionary prototypes.
 - d) Design a simple storyboard for a fitness tracking app. (Illustrate how the app displays the necessary details on the user’s smartphone and how he uses that app to check his BMI value and personalized workout plans).
 - e) Compare and contrast Design Theories, Principles, and guidelines with examples.

03. a) Discuss the importance of *efficiency* and *learnability* in Benyon's design principles. How can a designer balance these two aspects when developing an interactive system?
- b) "Visual design is not the same as art and artistic things". Justify this statement with two (02) facts.
- c) What is meant by *visual hierarchy* in user interface design?
- d) Explain the *Gestalt principles* with examples of how each can be applied in interface design.
- e) Explain the concept of heuristic evaluation in the context of user interface design.
04. a) What does it mean to design for diversity in the context of Human Computer Interaction(HCI)?
- b) What is the role of *empathy* in designing for diversity in user needs, backgrounds, and experiences ?
- c) Explain the main challenges of voice-based interaction in what?.
- d) How do haptic feedback and gesture recognition enhance the user interface experience?
- e) Provide a detailed comparison between usability testing and controlled experiments in the context of Human-Computer Interaction (HCI), including their objectives and methodologies.

//***** End of the Question Paper ***** //