

**National University**

**of Computer and Emerging Sciences Peshawar Campus**

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Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Roll No: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Program: BS(CS)

Semester: Fall-2023

Time Allowed: 1 hour

Course: CS2007 Human Computer Interaction

Examination: Sessional 1

Total Marks: 50 Weightage: 15

Date: September 23rd 2023 03:00 PM

Instructor Name: Zeshan Khan

**NOTE:** Attempt all questions.

Read each question completely before answering it. There are **5 questions** on **1 page**.

In case of any ambiguity, you may make assumption. But your assumption should not contradict any statement

in the question paper.

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| **Question No. 1** | **Define** | |
| **Time: 10 Min** | **CLO-1** | **Marks: 10** |

You are tasked for a interaction design of a mobile game. To boost users experience, you are required to communicate with users using all possible ways of user communication with mobile application. Write a list of 10 communication ways that you can use.

Answer:

Visual Communication

Auditory Communication

Tactile Communication

Gestural Communication

Haptic Communication

Olfactory Communication

Language Communication

Emotional Communication

Social Communication

Nonverbal Communication

Biometric Communication

Collaborative Communication

Attention Communication

Cultural Communication

Accessibility Communication

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| **Question No. 2** | **Design** | |
| **Time: 20 Min** | **CLO-1** | **Marks: 5+10=15** |

A popular mobile app for language learning has recently undergone a redesign. Users report difficulties in navigating the updated interface, resulting in a decline in active users. You are tasked to redesign that application for ease of access for the users.

A) What principle will support you to design better

B) Design the interaction (UI) on paper for three options of lectures, reading practices and writing practices

**Answer**:

Fitts’ Law for difficulty

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| **Question No. 3** | **Fitts’ Law** | |
| **Time: 15 Min** | **CLO-1** | **Marks: 10** |

A web application has a complex menu system with multiple submenus. Users, particularly new ones, struggle to locate specific features within the menus quickly. Describe how you would use Fitts' Law and Hicks Law principles to redesign the menu system for the web application, with a focus on improving learnability. Include considerations for target size and distance.

Answer:

Increase Target Size

Decrease Distance

Minimize Clutter

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| --- | --- | --- |
| **Question No. 4** | **Neilsen Heuristics** | |
| **Time: 30 Min** | **CLO-1** | **Marks: 10** |

According to the Neilsen Heuristic, Provide the names of the heuristics violated in the following scenarios:

A) A situation where users of a gesture-based interface were left unsure about the system's response to their gestures.

[Visibility of System Status]

B) A scenario where an application lacked consistency in gesture recognition or mapping, causing confusion among users.

[Consistency and Standards]

C) Users frequently made unintended clicks that triggered errors in system.

[Error Prevention]

D) We examine a gesture-based application designed for a virtual reality (VR) gaming platform. The application allowed users to interact with and control in-game actions using hand gestures. However, the application required users to memorize a complex set of gestures and commands to navigate and play the game effectively.

[Recognition Rather than Recall]

E) A mobile productivity application designed for task management and note-taking. The application aimed to offer a wide range of features and functionalities to cater to different user needs. However, the design choices resulted in a cluttered and overly complex command set.

[Flexibility and Efficiency of Use]