National University of Computer and Emerging Sciences
Lahore Campus

Applied HCI (CS3014)

Date: 21st September, 2025

Course Instructor(s)

Dr.Wafa Basit

Sessional-I Exam

Section: BS-SE

Total Time: 1 Hour

Total Marks: 40

Total Questions: 6

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Student Name   Roll No   Section   Student Signature

Instructions
- All questions should be solved on the question paper. No answer sheets should be attached
- Make assumptions where necessary
- Use of lead pencil is not allowed.

Case Study

The **National Museum of Art and Science** is redesigning its visitor experience. Traditionally, it relied on physical exhibits and audio guides. Recently, the museum introduced **wireless technology** and now plans to integrate **Virtual Reality (VR)** to make exhibits more immersive.

Visitors will be able to:

- Explore 3D recreations of ancient sites through VR headsets.
- Interact with virtual objects to learn their history and context.
- Use a mobile app connected to a wireless network to get personalized suggestions and deeper insights.

The museum's visitors are **highly diverse**:

- **Children** on school trips.
- **Adults** with general or specialized interests.
- **People with disabilities**, such as:
    - **Visual impairments** (need audio descriptions, haptic cues).
    - **Hearing impairments** (need captions, sign-language avatars).
    - **Motor impairments** (need easy navigation, gesture alternatives).

The museum management has hired you as an HCI consultant to ensure the design of this system supports **all users inclusively**.

Q1. (6 marks)
Using **Goal-Directed Design (GDD)**, identify **three distinct user personas** from the museum's visitor types. Suggest one key design decision to support them.

User persona	Design Decision

Q2. (6 marks)
Based on the case study, **identify three high-level goals** the museum system should achieve. Briefly explain why each goal is important.

Goal	Importance

Q3. (6 marks)

Choose **one of your goals** from Q2. Apply the **GQM (Goal–Question–Metric)** approach:

- **Goal:** State clearly.
- **Questions:** List at least three questions you would ask to assess whether this goal is met.
- **Metrics:** Propose at least three metrics to measure success.
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GOAL:---

Questions	Metrics

Q4. (6 marks)

Identify the Form/s and elaborate how the Form/s of Museums VR system would impact the UX?

Q5. (10 marks)

a) What is the first step of Goal Directed Design Process, b) Specify three methods to conduct it successfully ,Elaborate each method keeping in mind the Museum VR system .c) What type of data would you collect in each method

a)--

Methods	Explanation	Data type

Q6. (6 marks)

What feature would you incorporate for users at different levels of experience? Give one feature for each level, also explain briefly.

Experience Level	Feature

-------Good Luck-----