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Assignment # 1

Q1 – Brief Answers

i) Two situations where a mouse is preferred over a joystick

1. **Precise Pointer Selection** – Tasks like selecting icons, clicking small buttons, or navigating menus require **accuracy**, which a mouse provides much better than a joystick.
2. **General Desktop Use** – Activities such as web browsing, document editing, dragging–dropping files need **fine control**, which is difficult with a joystick.

ii) Significance of “7 + or - 2” in Human-Computer Interaction

The theory says **humans can keep only 5–9 items in working memory**.

In HCI, this means:

- ❖ Menus should not have too many options.
- ❖ Forms should not require remembering long steps.
- ❖ Interfaces should reduce cognitive load.

iii) Importance of “Context” in identifying needs & requirements

Context refers to **environment, user situation, culture, devices, and tasks**.

It is important because:

- ❖ User needs vary by real-life environment.
- ❖ Designers avoid wrong assumptions by observing context.
- ❖ Requirements become **accurate, realistic, and user-centered**.

Q2 – Difference between Prototypes, Wireframes, and Sketch + Scenario

1) Sketch

- ❖ Hand-drawn, quick, rough ideas.
- ❖ Represents early thinking.
- ❖ No details, no structure.
Used at: Very early stage (idea generation / brainstorming).

2) Wireframe

- ❖ Clean, grey-scale layout.
- ❖ Shows structure: navigation, buttons, elements.

- ❖ No colors or real images.
- Used at:** Low-fidelity design phase before UI.

3) Prototype

- ❖ Clickable, interactive model.
 - ❖ Shows real user flow and behavior.
 - ❖ Used for user testing.
- Used at:** Testing stage before development.

Scenario: Designing a Food Delivery App

Stage	What you use	Example
1.	Sketch	Draw rough boxes for home screen, menu, cart.
2.	Wireframe	Build clean layout showing where search bar, icons, and list items go.
3.	Prototype	Make a clickable app simulation where user can select items, add to cart, checkout.

Q3 – Why a designer's model differs from the end-user's model

A **designer's model** is based on:

- ❖ Technical knowledge
- ❖ System structure
- ❖ Internal logic
- ❖ How the system should work

A **user's model** is based on:

- ❖ Past experiences
- ❖ Expectations
- ❖ Simplicity
- ❖ What they think will happen

Why they differ:

- ❖ Users don't know internal system logic.
- ❖ Designers think in terms of data flow; users think in terms of tasks.
- ❖ Designers assume users understand design intentions.
- ❖ Users rely on habits learned from other apps.

Example:

Designer thinks "Add to Cart" → "stored in database table".
User thinks "My item is saved and visible in cart".

This mismatch leads to usability problems.

Q4 – Apply Nielsen's 10 Heuristics on Amazon App + Suggested Fixes

	Issue	Fix
Visibility of System Status	Loading indicators on Amazon sometimes appear late, causing confusion.	Add real-time progress bars and skeleton loading screens.
Match Between System & Real World	Technical terms like “Subscribe & Save” may confuse new users.	Use human language: “Save 10% on monthly repeat orders”.
User Control & Freedom	Accidentally adding items to cart requires multiple steps to remove.	Add Undo Add-to-Cart popup lasting 3–5 seconds.
Consistency & Standards	Some icons (e.g., three-dot menu) behave differently across screens.	Make all menus follow consistent Android/iOS UI standards.
Error Prevention	Users accidentally buy items due to Buy Now being near Add to Cart .	Add spacing + confirmation message for one-tap purchases.
Recognition rather than Recall	Order filters require remembering past search parameters.	Provide preset filters like “Last 30 days”, “Delivered”, “Cancelled”.
Flexibility & Efficiency	Power users cannot checkout quickly.	Provide Quick Checkout option for common addresses.
Aesthetic & Minimalist Design	Too many promotional banners clutter home screen.	Show only 2–3 personalized banners with “See More” link.
Help Users Recognize, Diagnose & Recover Errors	Payment failure messages do not explain the real reason.	Show clear messages like: “Your card expired. Update card to complete payment.”
Help & Documentation	Help section is hidden deep in menu.	Add Help icon on top navigation bar.