National University of Computer and Emerging Sciences, Lahore Campus

	Course Name:	Human Computer Interaction	Course Code:	CS 422
	Program:	SE (Software Engineering)	Semester:	Fall 2022
	Duration:		Total Marks:	
	Paper Date:	1-11-22	Weight	
	Section:	A , B , C	Page(s):	3
	Exam Type:	Quiz 4		

Student Name:_____ Roll No._____

Instruction/Note Solve on question paper, no rough sheets!

Q.1 Write any five golden rules of Shneiderman Interface Design. (5)

- Strive for Consistency
- Enable Frequent Users to Use Shortcuts
- Offer Informative Feedback
- Design Dialog to Yield Closure
- Offer Simple Error Handling
- Permit Easy Reversal of Actions
- Support Internal Locus of Control
- Reduce Short-Term Memory Load

Note : Any five of the above

Q.2 Differentiate between Strive for Consistency and Support Internal Locus of Control with Examples.(6)

Strive for Consistency:

Use all elements across your application consistently. For example a certain style of button should always do the same thing, or navigation should function logically, going deeper in hierarchy.

Support Internal Locus of Control:

We need to give control and freedom to the users, so that they can feel that they are in control of the system themselves, giving them some form of free will helps to reassure the user.

Note: Any relevant examples are accepted

Q.3 Differentiate between Gulf of Evaluation and Gulf of Execution with Examples.(6)

Gulf of Evaluation:

Gulf of Evaluation is user's expectation of changed system state is not equal to the actual presentation of this state

Example of a large gulf of evaluation : when an application has a spinning wheel to show a "loading" state after the user performs an action. The wheel alone is not enough for the user to interpret the progress that the system is making in response to their action. The gulf can be shortened by having a loading bar instead

Gulf of Execution:

Gulf of Execution is when user's formulation of actions is not equal to the actions allowed by the system

Example : a person can look at a light switch and easily tell what the current state of the system is (i.e., whether the light is on or off) and how to operate the switch. This means that the gulf of execution is small. Norman states that, in order to design the best interfaces, the gulf must be kept as small as possible.

Note: Any relevant examples are accepted

Q.4 Differentiate between Affordance and Visibility with Examples.(6)

Affordance:

The system should provide "strong clues to the operation of things". A button affords pushing, a lever affords pulling, etc. The user should know how to operate a control just by looking at it.

Visibility:

If I press this button, what will happen? If I want to unlock the door, which control should I use? A system with good visibility allows the user to easily translate goals into actions.

Note: Any relevant examples are accepted

Q.5 Differentiate between Strive for Consistency and Offer Simple Error Handling with Examples.(6)

Strive for Consistency:

Use all elements across your application consistently. For example a certain style of button should always do the same thing, or navigation should function logically, going deeper in hierarchy.

Offer Simple Error Handling:

A good interface should be designed to avoid errors as much as possible. However, if something goes wrong, your system should make it easy for users to understand and resolve the problem. Simple ways to deal with errors include displaying clear error notifications and descriptive hints to resolve the problem.

Note: Any relevant examples are accepted

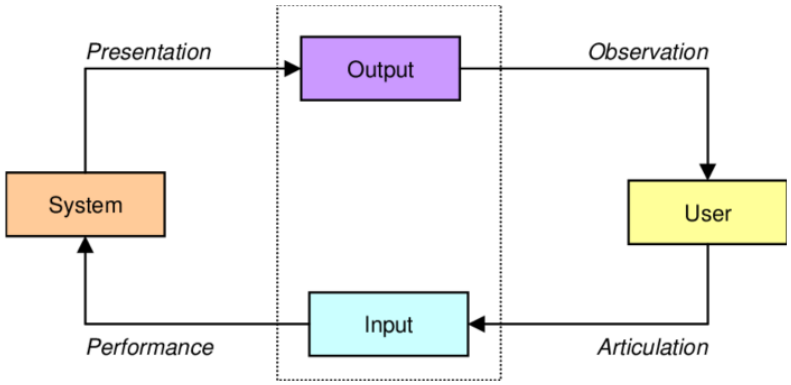
Q.6 What are the seven principles of Norman's model?(7)

1. **user establishes the goal**
2. **formulates intention**
3. **specifies actions at interface**
4. **executes action**
5. **perceives system state**
6. **interprets system state**
7. **evaluates system state with respect to goal**

Note : Marks are deducted for wrong order of steps as well as missing steps

Q.5 How Interaction Framework works? Write Four Steps.(4)

1. **User form a goal and find a task**
2. **He input the task to the machine**
3. **System Transforms and execute**
4. **Output shows the result**



Note : Marks are deducted for wrong order of steps, missing steps and usage of wrong terms