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**SUBJECT NAME: HUMAN COMPUTER  
INTERACTION**

## **QUESTION 1:**

**a: What is the main aim of the Don Norman's Book (The Design of Everyday things)?**

**ANSWER:**

The main aim of Don Norman's Book is about how design serves as the communication between object and user, and how to optimize that conduct of communication in order to make the experience of using the object pleasurable.

**b: Explain Deductive and Abductive reasoning with examples?**

**ANSWER:**

### **Deductive Reasoning:**

Deductive reasoning is a process in which a conclusion is based on the concordance of multiple premises that are generally assumed to be true. Deductive reasoning is sometimes referred to as top-down logic. Its counterpart, Inductive reasoning, is sometimes referred to as bottom-up logic.

For example:

A common example is the if/then statement. If  $A=B$  and  $B=C$ , then deductive reasoning tells us that  $A=C$ .

### **Abductive Reasoning:**

Abductive Reasoning is a form of logical interference which starts with an observation or set of observations and then seeks to find the simplest and most likely explanation for the observations.

For example:

- Sam drinks fast when drunk.  
If I see Sam driving fast, assume drunk.
- Ground is wet, if it is raining.  
Ground is wet, so, it is raining

## **QUESTION 2:**

**Analyze the following scenario and write down seven stages of action for given particular**

**Scenario for solution.**

**Scenario is:**

**Suppose I want to go to university, but the tyre of my car got punctured. Now I have to repair it.**

**You are required to write the seven stages of Gulf of Execution and Evaluation of the scenario.**

### **ANSWER:**

The seven stages of Gulf of Execution and Evaluation of the scenario are

1. Forming the goal
2. Forming the intention
3. Specifying an action
4. Executing the action
5. Perceiving the state of the world
6. Interpreting the state of the world
7. Evaluating the outcomes.

## **QUESTION 3:**

**a: Differentiate between slip and mistake.**

### **ANSWER:**

#### **SLIP:**

- Right intention, but failed to do it right.
- Cause: poor physical skill, in attention etc. (catching a ball)
- Change to aspect of skilled behavior can cause slip( you were needed skillfully).

**MISTAKE:**

- Wrong intention from very start.
- Cause: incorrect understanding.

**b: Explain self-perception and object-perception?**

**ANSWER:**

**SELF-PERCEPTION:**

- Self-perception is a process by which people develop a view of themselves.
- It is developed from social interaction within different groups.

**OBJECT-PERCEPTION:**

- Object perception is a process by which people develop a view of objects they see.
- Perception may cause optical illusions of objects that we see.

**QUESTION 4:**

**a: Write the steps involved in perceptual process?**

**ANSWER:**

The steps involved in perceptual process are:

1. The Environmental Stimulus
2. The Attended Stimulus
3. The Image of the Retina
4. Transduction
5. Neural Processing
6. Perception
7. Recognition
8. Action

**b: Differentiate between perception and recognition?**

**ANSWER:**

**PERCEPTION:**

Here, we actually perceive the stimulus object in the environment. It is at this point that we become consciously aware of the stimulus.

**RECOGNITION:**

Perception doesn't just involve becoming consciously aware of the stimuli. It is also necessary for our brain to categorize and interpret what it is we are sensing.

Our ability to interpret and give meaning to the object is the next step, known as recognition.

**QUESTION 5:**

**a: A graphic designer wants to design a 3d shape using Adobe Illustrator, he select a shape, apply some gradient on it and then apply drop shadow effect.**

**In the given scenario in the light of interaction identify the Goal, Problem domain and the task.**

**ANSWER:**

A gradient is a graduated blend of two or more colors or tints of the same color. You can use gradients to create color blends, add volume to color objects, and add a light and shadow effect to your artwork. In illustrator, you can create, apply, and modify a gradient using the Gradient Panel, the Gradient tool, or the control panel.

**GRADIENT TYPES:**

In illustrator you can create the following three types of gradients:

- **LINEAR:**

Use this gradient type to blend colors from one point to another in a straight line.

- **RADIAL:**  
Use this gradient type to blend colors from one point to another point in a circular pattern.
- **FREEFORM:**  
Use this gradient type to create a graduated blend of color stops within a shape in an ordered or random sequence such that the blending appears smooth and natural.

**b: Explain Gulf of Execution and Gulf of Evaluation.**

**ANSWER:**

**Gulf of Execution:**

Gulf of Execution is the degree of ease with which a user can understand the current state of a system. It is difference between the intention of the users and what the system allows them to do.

For 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 in on or off) and how to operate a 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.

**Gulf of Evaluation:**

Gulf of Evaluation is the degree of ease with which a user can perceive and interpret whether or not the action they performed was successful. This gulf is small when the system provides information about its state in a form that is easy to receive, interpret and matches the way the person thinks of the system.

For example:

If a person looks at a light switch, the gulf of evaluation is very small since, with one switch, the user will immediately know if their action was successful. An example of a large gulf of evaluation is 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.