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MODULE: SEMESTER-VI

Course: HUMAN COMPUTER INTERACTION

Program: BS (SE)

Instructor: Shahab-ul-Islam

Examination: Midterm Assignment

Total Marks: 30

Q1:

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

Answer(a):

The Design of Everyday Things shows that good, usable design is possible. The rules are simple: make things visible, exploit natural relationships that couple function and control, and make intelligent use of constraints. The goal: guide the user effortlessly to the right action on the right control at the right time.

- b) Explain Deductive and Abductive reasoning with examples.

Answer(b):

Deductive Reasoning :

Deduction is generally defined as "the deriving of a conclusion by reasoning." Its specific meaning in logic is "inference in which the conclusion about

particulars follows necessarily from general or universal premises." Simply put, deduction—or the process of deducing—is the formation of a conclusion based on generally accepted statements or facts.

Example :

It occurs when you are planning out trips, for instance. Say you have a 10 o'clock appointment with the dentist and you know that it takes 30 minutes to drive from your house to the dentist's. From those two facts, you deduce that you will have to leave your house at 9:30, at the latest, to be at the dentist's on time.

Abductive Reasoning :

Abductive reasoning is “inference to the best explanation”, it’s simply taking an educated guess at the “most likely” explanation for an observation, or set of observations, given the limited data and evidence you have
If you have conflicting evidence, or multiple competing hypothesis, you go with the simplest and most likely explanation, the one with the best evidence.

Example:

Sam drives fast when drunk.

If I see Sam driving fast, assume drunk.

Logical conclusion not necessarily true:

e.g. Ground is wet, If it is raining.

Ground is wet

So, it is raining

Q2:

Analyze the following scenario and write down seven stages of action for given particular (06) 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 to solve the scenario.

Answer(2):**Seven stages of Gulf of Execution & Evaluation :**

Stage 1 is Forming a Goal. This is what you want. As an example, I want to go to market, but the tyre of my car got punctured. Now I have to repair it.

Stage 2 is Forming the Intention. This is what would satisfy the goal. A repaired car would satisfy my goal of reaching the market.

Stage 3 is Specifying an Action. What do I have to do to achieve the intention? I would need to repair a car to meet the requirement set in my goal.

Stage 4 is Executing the Action. Here I would do the steps of the action. I would repair the car.

Stage 5 is Perceiving the State of the World. Using the senses to gather information. My repaired car would be able to move to the market.

Stage 6 is Interpreting the State of the World. What has changed? Punctured tyre of my car has been changed and it can move now.

Stage 7 is Evaluating the Outcome. Did I achieve my goal? I can move towards market now without worrying. I achieved my goal.

Q3:

a) Differentiate slip and mistake.

Slips:

- right intention, but failed to do it right
- causes: poor physical skill, in attention etc. (catching a ball)
- change to aspect of skilled behaviour can cause slip (You were needed skilfully)

Mistake :

- wrong intention from very start.
 - cause: incorrect understanding
- humans create mental models to explain behaviour.
- if wrong (different from actual system) errors can occur

b) Explain self perception and object perception.

Answer(b)

Self-Perception :

Self perception is a process by which people develop a view of themselves.

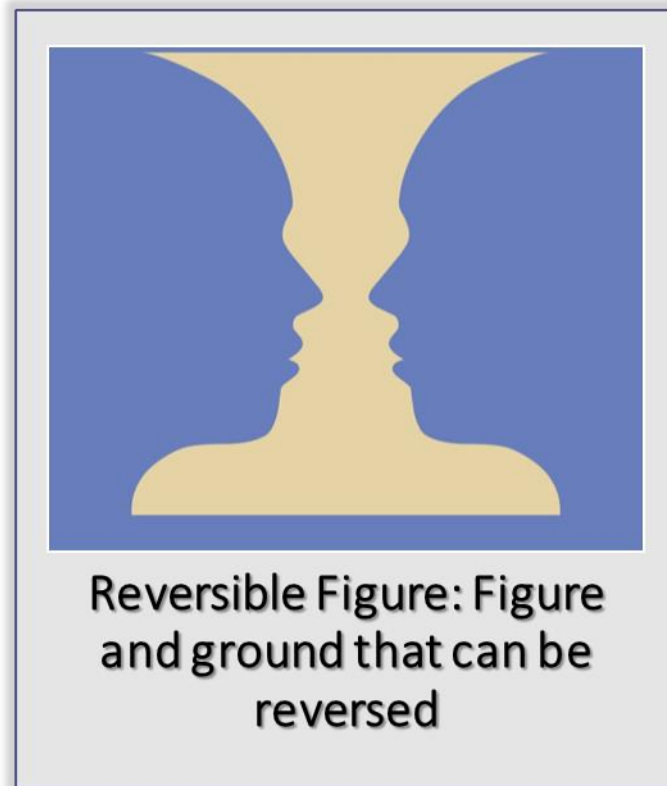
It is developed from social interaction within different groups.

Self-perception has three parts:

- Self-concept
- Self-esteem
- Self-presentation

Object-Perception :

Object perception is a process by which people develop a view of objects they see.



Q4:

a) Write the steps involved in perceptual process.

Answer(a):

Steps are:

1. The Environmental Stimulus
2. The Attended Stimulus
3. The Image on the Retina

4. Transduction

5. Neural Processing

6. Perception

7. Recognition

8. Action

b) Differentiate between perception and recognition.

ANSWER(b):

Perception:

Perception is our sensory experience of the world around us. It refers to the interpretation of what we take in through our senses.

- It involves both the recognition of environmental stimuli and actions in response to these stimuli.
- We gain information about properties and elements of the environment that are critical to our survival.

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.

Q5:

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):

Forming a Goal: This is what you want. design a 3d shape using Adobe Illustrator, select a shape, apply some gradient on it and then apply drop shadow effect.

Problem Domain: To make 3d shape experience and practice is needed ,what type of shape which tool will be used.

Task : open a new file in illustrator with a pen tool draw a shape maybe a square add gradient to it using gradient tool then make .Click on effect ,3d and then Extrude and bevel. Then a Dialog Box will open with some 3d settings adjust it angle , Direction ,Perspective etc and clck okay a 3d shape will be formed.

b) Explain Gulf of Execution and Gulf of Evaluation.**Answer(b):****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 the difference between the intentions 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 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.

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.