

IQRA National University, Peshawar

Department of Computer Science

Summer Semester / Examination, Date: 19th Aug, 2020

Mid – Semester Examination

Instructor: Mr. Shahab Ul Islam

Total Marks: 30 Time Allowed: 90 minutes



HUMAN COMPUTER INTERACTION

Instructions:

- All questions are compulsory.
- Marks of each question are mentioned with it.
- Marks will be given as per the DEPTH of the answer, not LENGTH. (Kindly don't write lengthy stories, just to the point)
- No *Out sourcing* please (Save that to IT Companies).
- For this paper, you'll not be required to borrow anything from anyone.

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Q1:

Marks

- a) Why we need to study HCI?

ANSWER (A)

(04)

There are some reason

We need to study HCI because we want to make computer design easy for the user in HCI we study the relation of human and computer to understand it from both ways and to make a better design so that the user can use it smoothly and with ease.

Computer is developed for the purpose human are use it or human made it for their services or facilities so we study human computer interaction that how best it Computer can be used by human for best utilization .

Human computer interaction is a sub that the interaction between human and computer .

- b) Briefly explain the main goals of HCI. (06)

ANSWER (B)

Main goals of Human computer interaction

- 1) Improve the interaction between users and computers

The main goal of HCI is to make the computer design understandable for the user design is the key and appealing part of a software so for making the design simple and conveying is the main goal of HCI and to understand the design from the user perspective that's also the main goal of HCI.

- Create usable software-enabled products and user-interfaces.
- Enhance the usability of existing products
- Identify problems and tasks (such as in the workplace) that can be addressed with software product

Q2:

a) Explain WYSIWYG.

(02)

WYSIWYG stands for "what you see is what you get". With a WYSIWYG editor, how your design and content appears on the editing platform is exactly what it will look like in the final version.

Microsoft Word is a common example that helps to define a WYSIWYG editor. You have a blank page with some formatting tools that allow you to add and format words, tables, images and so forth. What you see on the screen is exactly what you see when you print or share the document. In other words; it's "what you see is what you get".

ANSWER

b) Differentiate between perception and recognition.

(02)

ANSWER

PERCEPTION

Perception is a process by which individuals organize and interpret their sensory impression in order to give meaning to their environment.

2) Different people perceive different things about the same situation and one might change one's perspectives.

3) Perception varies from person to person.

4) In the process of perception, people receive many different kinds of information through all five senses, assimilate them, and then interpret them.

5) Different people perceive the same information differently.

RECOGNITION

1) Perception does not just involve becoming consciously aware of 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

c) Explain the steps involved in perceptual process. (06)

ANSWER

Steps involved in perceptual process are that

Steps are:

The Attended Stimulus
The Image on the Retina
Transduction
Neural Processing
Perception
Recognition
Action

1) ATTENDED STIMULUS

The attended stimulus is the specific object in the environment on which our attention is focused. In many cases, we might focus on stimuli that are familiar to us, such as the face of a friend in a crowd of strangers at the local coffee shop.

2) The Image on the Retina

The attended stimulus is formed as an image on the retina.

The first part of this process involves the light actually passing through the cornea and pupil and onto the lens of the eye.

The cornea helps focus the light as it enters the eye, and the iris of the eye controls the size of the pupils in order to determine how much light to let in.

The cornea and lens act together to project an inverted image on the retina.

3)TRANSDUCTION

The image on the retina is then transformed into electrical signals in a process known as transduction. This allows the visual messages to be transmitted to the brain to be interpreted.

The retina contains many photoreceptor cells. These cells contain proteins known as rods and cones. Rods are primarily for seeing things in low light, while cones are associated with detecting color and shapes at normal light levels.

4)Neural Processing

The electrical signals then undergo neural processing. The path followed by a particular signal depends on what type of signal it is (i.e. an auditory signal or a visual signal).

Through the series of interconnect neurons located throughout the body, electrical signals are propagated from the receptors cells to the brain

5)Perception

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

6)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.

7) ACTION

perceptual process involves some sort of action in response to the environmental stimulus.

This could involve a variety of actions, such as turning your head for a closer look or turning away to look at something els

Q3:

a) Differentiate slip and mistake.

(04)

ANSWER

There are two ways to think about errors that people make. Some occur when people don't know what to do because they haven't learned or been taught to use something properly. These are what we call mistakes.

The difference between slips and mistakes is important. If someone makes a mistake because they don't know what to do, we can train them to improve their performance

b) Explain the Fitts' law in your own words.

(06

ANSWER

Fitts's law is a highly successful formulation that describes how the time to complete a movement depends on the distance to be covered and the spatial accuracy required. Although Fitts's law does not apply to all aimed movements ([Wright & Meyer, 1983](#)) and there has been interest in ways to escape the limitations it imposes in virtual environments (e.g., Balakrishnan, 2004), the class of movements to which it does apply is large and of immense practical significance

The purpose of this article is neither to extend nor question Fitts's Law, which we take as a given. Instead we wish to explore three issues that have arisen as Fitts's law has been applied in human–computer interaction (HCI). The theme that unites these three issues is a concern that ideas and practices, which emerged from the basic research that provided the underpinnings of Fitts's law, have been adopted by applied researchers without sufficient scrutiny. Recent standardization efforts have made these issues more salient.