National University of Computer and Emerging Sciences, Lahore Ca[redacted]

Course Name:	Human Computer Interaction	Course Code:	CS2007
Degree Program:	BSSE	Semester:	Fall 2023
Exam Duration:	60 Minutes	Total Marks:	35
Paper Date:	8-Nov-2023	Weight	15
Section:	ALL		
Exa[redacted]			

Student [redacted]

Instruction/Notes: Attempt all questions. Your [redacted] point. Use the given space only. Extra sheets are not allowed. Avoid cutting or overwriting. Programmable calculators are not allowed. One sided , A4 sized , handwritten cheat sheet is allowed for mid-2 exams.

Question#1 [Marks 10 CLO-3]

Select the correct option:

1- What is the primary purpose of a conceptual model design?

A) To provide low level implementation details

B) To suggest high-level presentation rules

C) To layout screen content

D) To provide feedback to users

2- Which of the following is true about a conceptual model?

A) It is the same as the detailed design of the interface

B) It is the foundation or overall architecture of the interface

C) It should be complex and comprehensive

D) It is only concerned with screen content

3- What should the foundation of a conceptual model be like?

A) Complex and intricate

B) Simple, natural, and intuitive

C) Detailed and specific

D) Broad and ambiguous

4- In usability goal setting, what is the main purpose of establishing specific usability goals?

A) To drive user interface design

00

B) To create a detailed implementation plan

C) To layout screen content

D) To provide feedback to users

5- Usability goals should be:

A) Vague and general

B) Specific, qualitative, and quantitative

C) Only quantitative

D) Only qualitative

6- What is the significance of knowing your users in navigational design?

A) To make the design more complex

B) To tailor the design to the users' needs and preferences

C) To make the design more generic

D) To ignore the users' needs

7- In navigational design, understanding what will happen when a button is pressed is important for:

A) Creating complexity

B) Ensuring predictability and consistency

C) Ignoring user expectations

D) Making the design more generic

8- A good navigational design should enable users to:

A) Feel lost and confused

B) Understand where they are in the interaction

C) Ignore user guides

D) Rely on trial and error

9- In usability goal setting, the goals should be derived from:

A) Random ideas

B) Previous tasks and general business goals

C) Ignoring user needs

D) Low-level implementation details

10- Understanding your users in navigational design helps to:

A) Make the design more user-centered

B) Ignore user preferences

C) Make the design more complex

D) Rely on the designer's preferences

Question#2 [Marks 10 CLO-3]

Scenario: An automation based system is to be developed for a toy manufacturing factory.The following summary of userprofile is provided for engineers working in the factory.

Engineers are trained, salaried employees who design, purchase, install, and support production processes and equipment. They include process engineers, plant engineers, controls engineers, and other professions that support plant processes and operations.There are a total of 972 engineers, representing 9 percent of the total workforce, working in four different plants all in the same city.

User Characteristics:

Motivation & attitude towards automation: high

Educational level: Very high

Age: 30-55 years

Job and task experience levels: Moderate to high

Computer experience: Moderate to high

Frequency of computer use: Moderate

Level of trainning: Moderate

Medical Conditions: more than 7 percent (65) have some form of color vision deficiency. A substantial majority wear corrective lenses (77 percent).

Extract two usability requirements from the user profile given above.Highlight the characteristic because of which you extracted the requirement.

Answer:

Usability Requirement:

[redacted]

Related Characteristic:

Age: 30 to 55 years.
Computer Experience: Moderate to High.

Usability Requirement:

More than 7 percent of workforce has colour vision deficiency & majority of them have vision problems. The program needs to be created considering these physical characteristics.

Related Characteristic:

Medical Condition: 7+ colour Deficiency & majority wears lenses.

Extra (Usability Requirement) Majority of users have a positive attitude towards automation and most are computer literate & experienced. The interface should keep ease of learning low & ease of use high to achieve efficiency. (Related Characteristics)

Computer Experience: Moderate to High
Motivation & Attitude towards automation: High.

Question#3 [Marks 5 CLO-3]

A. Who is the Task Leader of "User Profile" activity?

The task leader is a "requirement engineer". Also, other stakeholders include, users, Front-end developers and other engineers and managers.

B. Which task of usability engineering lifecycle feeds directly into contextual task analysis?

"User Profiles" are inputted directly into the contextual task analysis. They are used to obtain a user centred model.

23

Question#4 [Marks 5 CLO-2]

You are designing a point of sales system for a retail store chain.Users of the product are not very familiar with the concept of an automated system to manage the whole process. So you are designing the system while keeping in mind the "Ease of Learning" usability goal.

Write down two metrics/measures for measuring the satisfaction and training time of the users.

Answer: The 2 metrics used to measure the 2 usability dimensions of "[illegible] are given below:-

Question#5 [Marks 5 CLO-2]

Match the descriptions in the first column with the appropriate usability terms in the second column.

Instructions: For each item in the first column, match it with the correct term from the second column that best describes the concept referred to by the description. Write your answers in the third column provided.

Descriptions	Usability Concepts	Your Answers
This concept emphasizes the necessity of understanding not just the users' physical capabilities, but also how they process information and make decisions, to ensure that the product aligns with their mental models and cognitive abilities.	User Profile	
Rather than being a static document, this is a dynamic aspect of the usability engineering process, evolving as more information about the users and their needs becomes available, ultimately guiding the design to better suit the target user population.	Usability Engineering Lifecycle	
This outlines how a product's user interface should be designed to accommodate users with various visual impairments, ensuring accessibility and ease of use for all potential users.	Cognitive Constraints	
This process involves a series of tasks, each building upon the last, to systematically integrate usability considerations throughout the product development lifecycle, ensuring that user needs and limitations are addressed from the outset.	User-Friendly Product Benefits for Develop Organizations	
Beyond immediate user satisfaction, this aspect underscores the long-term business advantages of investing in usability, highlighting the potential for increased market share and customer loyalty as users find the product more intuitive and satisfying to use.	Usability Requirements Summary	