

KATHMANDU UNIVERSITY
End Semester Examination
June/July, 2023

Marks Scored:

Level : B.Sc.

Year : III

Exam Roll No. :

Time: 30 mins.

Registration No.:

Course : COMP 341

Semester : II

F. M. : 10

Date 07 JUL 2023

SECTION "A"

[20Q. × 0.5 = 10 marks]

Mark [X] to the most appropriate option from the given choices.

1. Which of the following is not a usability goal in HCI?
 Efficiency Learnability Aesthetics Error prevention
2. Ethnographic observation involves _____.
 Conducting controlled experiments in a lab setting
 Studying users' behaviour in their natural environment
 Collecting feedback through surveys and questionnaires
 Analysing log data from user interactions
3. Which evaluation method is best suited for identifying usability issues after building initial prototype?
 Expert reviews Usability testing
 Surveys Controlled experiments
4. What does Fitts's Law state?
 Users tend to choose the option with the highest affordance
 The time to acquire a target is influenced by its size and distance
 Users' memory performance is improved through chunking
 The visibility of system status enhances user experience
5. The concept of affordance refers to _____.
 The visual attractiveness of an interface
 The ease of learning a system
 The perceived action possibilities of an object or element
 The consistency of design elements
6. Consistency in interface design refers to _____.
 The use of familiar icons and symbols
 The uniformity and predictability of design elements and interactions
 The ease of navigation within the interface
 The ability to customize the interface to individual preferences
7. Which of the following is an example of a novel interaction device?
 Mouse Keyboard
 Gesture recognition sensor Touchscreen

8. Usability testing involves _____.
- Analysing user surveys and feedback
 - Evaluating expert opinions on interface design
 - Conducting controlled experiments in a lab setting
 - Observing users performing tasks on a system and collecting their feedback
9. Which of the following is an example of direct manipulation?
- Typing commands in a command line interface
 - Dragging and dropping files in a file manager
 - Interacting with a virtual reality headset
 - Using voice commands to control a smart home device
10. The principle of visibility in HCI refers to _____.
- The aesthetic appeal of an interface
 - The ability to customize interface elements
 - Making important information and controls readily perceptible to users
 - The consistency of design elements across different platforms
11. Usability goals in HCI include _____.
- Efficiency, effectiveness, and satisfaction
 - Visibility, affordance, and consistency
 - Sensory memory, working memory, and long-term memory
 - Error prevention, error detection, and error recovery
12. The command-organization functionality in HCI refers to _____.
- The arrangement of commands in alphabetical order
 - The grouping of related commands into meaningful categories
 - The logical structure and layout of commands for efficient interaction
 - The use of natural language processing in command-based interfaces
13. Which of the following is an example of a menu selection interaction?
- Choosing an option from a drop-down menu
 - Entering text in a text field
 - Dragging and dropping files
 - Using voice commands to control a virtual assistant
14. Online help systems provide users with _____.
- Printed manuals and guides
 - Interactive assistance and information within the application
 - Expert reviews and evaluations of the system
 - Social communities and forums for user support
15. The concept of chunking in HCI refers to _____.
- The division of tasks into smaller subtasks
 - The arrangement of design elements on a grid layout
 - Grouping information into meaningful units to enhance cognitive processing
 - The application of responsive design principles for different screen sizes
16. The participatory design approach involves _____.
- Conducting user surveys and questionnaires
 - Involving users in the design and decision-making process
 - Analysing user feedback and usage data
 - Creating personas and scenarios based on user research

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17. Which of the following is an example of a pointing device?
 Keyboard Monitor Touchpad Microphone
18. Which of the following is an example of a controlled experiment in HCI evaluation?
 Conducting usability testing with a group of participants
 Observing users' behaviour in their natural environment
 Comparing two interface designs with different user groups and measuring performance
 Analysing usage logs and metrics from a deployed system
19. Which of the following is an example of a universal usability consideration in HCI?
 Designing for users with visual impairments
 Adapting the interface for different screen resolutions
 Ensuring accessibility for users with diverse cultural backgrounds
 Optimizing the interface for faster processing speed
20. Which of the following is a key consideration when designing for users with disabilities in HCI?
 Cultural and international diversity Cognitive and perceptual variations
 Physical variation Inclusive design and accessibility

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SECTION "B"

[6Q. × 4 = 24 marks]

Attempt *ANY SIX* questions.

1. Discuss the challenges and considerations involved in designing interfaces for *users with disabilities*. Provide examples of design strategies that can enhance *accessibility*.
2. Discuss the advantages and disadvantages of *online help systems* compared to *paper manuals*. Explain the factors that should be considered when deciding between these two forms of *user documentation*.
3. Describe the concept of *Virtual Reality (VR)* and discuss its potential applications in Human Computer Interaction. What are some usability challenges associated with VR interfaces?
4. You are designing a mobile application for note-taking. Explain how you would apply the *principle of consistency* in the design of the application's user interface. Provide two specific design elements that would demonstrate *consistency*.
5. Describe the concept of *affordance* in the context of a smart home control panel. Provide two examples of how you would design the control panel to effectively communicate the available actions and functionalities to users.
6. You are asked to design a *voice-controlled personal assistant application*. Discuss two usability challenges associated with *speech and auditory interfaces* and propose design strategies to overcome these challenges.
7. You are working on a fitness tracking mobile app. Explain how you would apply *Fitts's Law* in the design of the app's touch targets to enhance user interaction and minimize errors. Provide two design recommendations based on *Fitts's Law*.

SECTION "C"

[2Q. × 8 = 16 marks]

Attempt *ANY TWO* questions.

8. You are asked to design a mobile banking application. Discuss three *usability goals* that should be prioritized for this application and explain how you would achieve each goal through interface design decisions.
9. Your team is working on collaborative project management software. Discuss the role of *participatory design* in understanding user needs and fostering user engagement in the design process. Provide examples of how you would involve users in the design and decision-making stages.
10. Discuss the role of *ethnographic observation* in understanding user needs in the design process. Explain the steps involved in conducting *ethnographic observation* and highlight its role in interface design decisions.