

Human-Computer Interaction (HCI)

User Interface Design, Interaction Principles, Screen Formatting, Controls & Evaluation

Total Questions: 105	Quizzes: 5	Verification: 100% Passed Keys
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Unit 01: Introduction to HCI & User Interface Design

Unit 1 - Introduction to HCI & User Interface Design

Q1. Which of the following are important in the design focus of HCI?

- A. The requirements and expectations of the user
- B. Technical characteristics and limitations of the computer.
- C. The physical limitations and abilities people possessed by the users.
- D. All of the above [✓ Verified Answer]**

Conceptual Rationale: Human-Computer Interaction (HCI) is inherently interdisciplinary. It studies both the human (cognitive, sensory, and physical capabilities/limitations as well as user mental models and expectations) and the machine (technical constraints, processing capabilities, input/output mechanisms) to optimize interaction.

Q2. Which of the following statement is suitable to define User Interface Design.

- A. It is an effective communication medium between a human and a computer.
- B. It identifies interface objects and actions.
- C. It creates a screen layout that forms the basis for a user interface prototype
- D. All of the mentioned above [✓ Verified Answer]**

Conceptual Rationale: According to Roger Pressman (Software Engineering), user interface design establishes an effective communication medium between human and computer. It identifies user-facing interface objects and actions, and structures screen layouts that evolve into functional UI prototypes.

Q3. Which of the following option is not considered by the Interface design

- A. The design of interfaces between software components
- B. The design of interfaces between the software and human producers and consumers of information
- C. The design of the interface between two computers [✓ Verified Answer]**
- D. All of the mentioned

Conceptual Rationale: In software engineering interface design, three categories are designed: 1. Internal interfaces between software components / modules. 2. External interfaces between the software and other external non-human entities (sensors, databases, devices). 3. User interfaces between software and human users. The physical/networking interface between two hardware computers belongs to computer networking and hardware systems architecture, not software UI/interface design.

Q4. A software might allow a user to interact via,

- A. Keyboard commands
- B. Mouse movement
- C. Voice recognition commands
- D. All of the mentioned [✓ Verified Answer]**

Conceptual Rationale: Modern multimodal interfaces support discrete text input (keyboard), pointing and spatial navigation (mouse/trackpad), and natural language voice commands.

Q5. You have to address a usability issue pertaining to a software interface. You will provide solutions after understanding:

- A. How the developer uses the software
- B. How the users use the software [✓ Verified Answer]**
- C. How you use the software
- D. How your friends use the software

Conceptual Rationale: Under the principles of User-Centered Design (UCD), usability evaluations and redesigns must reflect the behavior, mental models, workflows, and pain points of the actual target end users, rather than the assumptions of developers, designers, or personal friends.

Q6. Which of the following is golden rule for interface design?

- A. Strive for consistency
- B. Offer error prevention and simple error handling
- C. Reduce short-term memory load
- D. All of the mentioned [✓ Verified Answer]**

Conceptual Rationale: All three statements are core tenets of Ben Shneiderman's Eight Golden Rules of Interface Design: - Rule 1: Strive for consistency. - Rule 5: Prevent errors and offer simple error handling. - Rule 8: Reduce short-term memory load (7 ± 2 chunks rule).

Q7. The benefits of a good screen design are,

- A. Productivity of the users' increase
- B. The task completion rate was found to be higher in the websites
- C. Employee satisfaction is increased
- D. All the above [✓ Verified Answer]**

Conceptual Rationale: As detailed in Wilbert O. Galitz (The Essential Guide to User Interface Design, Chapter 1), well-structured screen layouts directly minimize eye movement and confusion, boosting operator productivity, speeding up task completion rates, lowering error rates, and significantly improving user/employee satisfaction.

Q8. GUI means

- A. Graphical User Interface [✓ Verified Answer]**
- B. Graphical User Interaction
- C. Graphics Uniform Interaction
- D. None of the above

Conceptual Rationale: GUI is the universally recognized acronym for Graphical User Interface, which relies on graphical representations (windows, icons, menus, pointing devices) rather than purely text-based interfaces.

Q9. The first GUI was developed in,

- A. 1971
- B. 1975
- C. 1980
- D. 1973 [✓ Verified Answer]**

Conceptual Rationale: The world's first graphical user interface was developed in 1973 at Xerox PARC (Palo Alto Research Center) for the Xerox Alto computer, introducing windows, menus, icons, and a three-button mouse.

Q10. What is the visual component of a GUI

- A. Container
- B. Object [✓ Verified Answer]**
- C. Composite
- D. Icon

Conceptual Rationale: In Wilbert O. Galitz (The Essential Guide to User Interface Design, Chapter 2: "The Graphical User Interface"): Objects are what people see on the screen. In graphical systems, an Object is the fundamental visual component manipulated by users through actions. Icons, windows, and controls are visual representations or specific manifestations of objects.

Q11. Which type of User Interface provide input by typing a string through the keyboard

- A. Graphical User Interface
- B. Command Line User Interface [✓ Verified Answer]**
- C. Natural Language Interface
- D. Menu Interface

Conceptual Rationale: In a Command Line Interface (CLI) or Command Language interface, user input is supplied strictly by typing command strings into a prompt using the keyboard, followed by a carriage return (Enter).

Q12. Which of the following devices are mainly responsible for the user interface?

- A. Input and output devices [✓ Verified Answer]**
- B. Memory devices
- C. Processor
- D. None of the above

Conceptual Rationale: The user interface is the perceptual and physical bridge between human and machine. It is realized through input devices (keyboard, mouse, touchscreen, microphone) for user actions and output devices (monitor, display panel, speakers) for system feedback.

Q13. Which of the following define the characteristic of a good user interface?

- A. Sophisticated Visual Presentation
- B. Object Orientation
- C. Concurrent Performance of Functions
- D. All of the above [✓ Verified Answer]**

Conceptual Rationale: Wilbert O. Galitz explicitly identifies the core characteristics of graphical user interfaces as: - Sophisticated Visual Presentation (graphics, typography, colors, spatial alignment). - Object Orientation (users interact directly with visual objects and apply actions to them). - Concurrent Performance of Functions (multitasking across multiple active windows/tasks simultaneously).

Q14. Which of the following is not a type of user interface?

- A. Command language based
- B. Menu based
- C. Efficiency based [✓ Verified Answer]**
- D. Direct manipulation based

Conceptual Rationale: Primary user interface interaction styles (Shneiderman): 1. Command language 2. Menu selection 3. Direct manipulation 4. Form fill-in / Natural language. Efficiency is a quantitative usability metric/goal, not an interface type or interaction style.

Q15. The main function of user-interface is to

- A. Convert program/ programs into machine language
- B. Transmit data to a remote location
- C. Connect users with an application through graphical options like icon, menu, text etc [✓ Verified Answer]**
- D. None of these above

Conceptual Rationale: Compiling to machine code is the role of compilers/interpreters; transmission is the role of network protocols. The user interface connects and translates interactions between the user and application logic via interactive screen controls (icons, menus, text fields, buttons).

Q16. Which of the following is a golden rule of interface design?

- A. Make the interface consistent
- B. Reduce the user's memory load
- C. Place the user in control
- D. All of these [✓ Verified Answer]**

Conceptual Rationale: Theo Mandel's Three Golden Rules (also featured prominently in Roger Pressman's UI Design framework): 1. Place the user in control. 2. Reduce the user's memory load. 3. Make the interface consistent.

Q17. Which of the below is not an advantage of Graphical Systems

- A. Faster Learning
- B. Faster use and problem solving
- C. Greater design Complexity [✓ Verified Answer]**
- D. More attractive

Conceptual Rationale: Galitz categorizes Greater Design Complexity as a primary disadvantage / challenge of graphical systems. Building a graphical system requires managing multiple visual states, concurrency, window management, and diverse input hardware, which increases development and design complexity.

Q18. Web interface design is complex because

- A. Design language has limited objects and interaction styles
- B. Browser navigation takes time
- C. Information architecture and workflow cannot be standardized.
- D. All the above [✓ Verified Answer]**

Conceptual Rationale: In Galitz's comparative study of GUI vs. Web Interface Design: - The Web's HTML/browser presentation model historically has fewer native interactive widgets than desktop OS toolkits. - Browser requests incur transmission and rendering delays. - User browsing patterns are unconstrained and nonlinear (users can enter through any URL, bookmark, or search link), making strict workflow standardization difficult.

Q19. Which of the following is not a characteristic of Web Interface

- A. Responsiveness
- B. Reactive [✓ Verified Answer]**
- C. Security
- D. Reliability

Conceptual Rationale: Traditional Web Interfaces are based on a request-response / pull model (stateless HTTP, page reloads upon link activation), making them fundamentally non-reactive compared to desktop GUI event-driven architectures. Responsiveness (adapting to screen sizes / responding to input), Security, and Reliability are recognized requirements/characteristics in web engineering, whereas pure Reactivity is not considered an inherent characteristic of the traditional web interface model.

Q20. Which of the following statements is false about Web page design

- A. User hardware variations are limited. [✓ Verified Answer]**
- B. User focus is on navigation and information
- C. Data is not private
- D. Response time depends on transmission speeds.

Conceptual Rationale: In Web design, user hardware variation is virtually limitless (innumerable monitor sizes, display resolutions, aspect ratios, mobile/desktop processors, and GPUs). Claiming that user hardware variations are "limited" is completely false.

Q21. Which of the following statements is false about Web pages

- A. Fixed page size. [✓ Verified Answer]**
- B. Page rendering is slow
- C. Page resolution is less
- D. Page is viewed randomly

Conceptual Rationale: Unlike GUI application windows or printed media which have defined boundaries, Web pages have fluid / variable dimensions and indefinite scrollable length. Stating that web pages have a "Fixed page size" is false.

Q22. Which of the following are the principles of User Interface Design

- A. Accessibility
- B. Availability
- C. Configurability
- D. All the above [✓ Verified Answer]**

Conceptual Rationale: Foundational UI design principles defined by Galitz and ISO 9241 include: - Accessibility: Designing interfaces usable by individuals with varying abilities and disabilities. - Availability: Ensuring necessary commands and tools are visible and operable when needed. - Configurability: Enabling customization of views, shortcuts, and preferences.

Q23. User Interface Design is implemented by software engineers; it is an iterative process that draws on predefined design principles

- A. True [✓ Verified Answer]**
- B. False

Conceptual Rationale: Verbatim definition from Roger Pressman's Software Engineering: UI design is an iterative engineering process involving user analysis, task modeling, prototyping, and evaluation against proven design principles.

Q24. The main goal of a Web Page Design is to provide information

- A. True [✓ Verified Answer]**
- B. False

Conceptual Rationale: In Galitz's taxonomy: - The core objective of a Web Page is information presentation, reading, and navigational browsing. - The core objective of a Web Application is task completion and data processing.

Q25. The main goal of a Web Application Design is to collect and process data

- A. True [✓ Verified Answer]**
- B. False

Conceptual Rationale: Web applications (unlike static informational pages) are designed to facilitate user tasks, collect transactional input through dynamic forms, and process server-side data (e.g., e-commerce, web mail, enterprise portals).

Unit 02: Understanding Users & Web Interface Design Principles

Q1. Which one of the following is not a factor that a designer considers to understand how users interact with a computer?

- A. The Human Action Cycle
- B. Trouble using the computer by the users
- C. Knowledge of the user about the hardware of the system [✓ Verified Answer]**
- D. The tasks performed by the users

Conceptual Rationale: Designers evaluate Norman's Human Action Cycle, common user usability hurdles/troubles, and user task workflows. Users do not need technical knowledge of internal computer hardware architecture, nor does the designer design interfaces around internal hardware awareness.

Q2. Which of the following is not a psychological response of people to poor design?

- A. Confusion
- B. Annoyance
- C. Errors during tasks. [✓ Verified Answer]**
- D. Frustration

Conceptual Rationale: Wilbert O. Galitz (*The Essential Guide to User Interface Design, Chapter 1*) explicitly classifies responses to poor design into: - Psychological Responses: Confusion, Annoyance, Frustration, Boredom, Panic. - Behavioral / Task Outcomes: Errors during tasks, reduced throughput.

Q3. Which of the following is not a physical response of people to poor design?

- A. Abandonment of the system
- B. Compensatory activity
- C. Modification of the task
- D. Boredom [✓ Verified Answer]**

Conceptual Rationale: In Galitz's taxonomy: - Physical / Action Responses: Abandonment of the system, Compensatory activity (workarounds, manual paper trails), Modification of the task, Misuse of the system. - Boredom is an emotional / psychological response, not an overt physical action.

Q4. Which of these is not an attribute influencing interface design?

- A. Perception
- B. Memory
- C. Visual acuity
- D. Experience of the user [✓ Verified Answer]**

Conceptual Rationale: In Galitz Chapter 1 (*Important Human Characteristics in Design*), Perception, Memory, and Visual Acuity are defined as fundamental biological/cognitive human faculties. User experience is a variable user background/profile characteristic rather than an inherent sensory/cognitive human faculty.

Q5. Which of the following is not a psychological characteristic of the user to be considered in the interface design?

- A. Attitude
- B. Patience
- C. Age [✓ Verified Answer]**
- D. Cognitive Style

Conceptual Rationale: In user analysis profiles: - Psychological Characteristics: Attitude, Motivation, Patience, Cognitive Style, Expectations. - Physical / Demographic Characteristics: Age, Gender, Handedness, Disabilities.

Q6. Which of the following is not a physical characteristics of the user to be considered in the interface design?

- A. Gender
- B. Stress [✓ Verified Answer]**
- C. Handedness
- D. Disability

Conceptual Rationale: Stress is a psychological / emotional state. Gender, Handedness (left/right-handed interaction ergonomics), and Physical Disabilities are physical characteristics.

Q7. Web interface design is complex because,

- A. Design language has limited objects and interaction styles
- B. Browser navigation takes time
- C. Information architecture and work flow cannot be standardized.
- D. All the above [✓ Verified Answer]**

Conceptual Rationale: Replicated from foundational Web vs. GUI comparative analysis (Galitz Chapter 2). HTML widget limitations, network round-trip latencies, and unconstrained nonlinear user navigation paths all contribute to web design complexity.

Q8. Which of the following is not a characteristic of Web Interface

- A. Responsiveness
- B. Reactive [✓ Verified Answer]**
- C. Security
- D. Reliability

Conceptual Rationale: Web interfaces historically operate on a pull/request-response paradigm rather than an event-driven reactive architecture. (Confirmed portal key).

Q9. Which of the following statements is false about Web page design

- A. User hardware variations are limited. [✓ Verified Answer]**
- B. User focus is on navigation and information
- C. Data is not private
- D. Response time depends on transmission speeds.

Conceptual Rationale: Hardware variations among web users are nearly limitless (varying displays, processors, aspect ratios, mobile devices). Saying variations are "limited" is false.

Q10. Which of the following statements is false about Web pages

- A. Fixed page size. [✓ Verified Answer]**
- B. Page rendering is slow
- C. Page resolution is less
- D. Pages are viewed randomly

Conceptual Rationale: Unlike printed pages or fixed GUI windows, Web pages have fluid, scrollable, and indefinite page dimensions.

Q11. Which of the following is / are the principles of User Interface Design

- A. Accessibility
- B. Availability
- C. Configurability
- D. All the above [✓ Verified Answer]**

Conceptual Rationale: Accessibility, Availability, and Configurability are universal interface design principles defined across HCI standards and guidelines.

Q12. There are two types of responses by the user to a poor design: Psychological and Physical

- A. True [✓ Verified Answer]**
- B. False

Conceptual Rationale: Galitz directly divides user reactions to poor design into two main categories: Psychological responses (emotional stress, confusion) and Physical responses (task abandonment, compensatory activities).

Q13. As the flexibility of a system increases, its usability decreases

- A. True [✓ Verified Answer]**
- B. False

Conceptual Rationale: Known as the Flexibility-Usability Tradeoff principle in interface engineering: as a system accommodates more flexibility and capabilities, complexity multiplies, which inherently reduces simplicity and ease of use (usability).

Q14. Use of Jargon makes it difficult to use a system

- A. True [✓ Verified Answer]**
- B. False

Conceptual Rationale: Jakob Nielsen's Heuristic #2 (Match between system and the real world) stresses that systems should speak the user's natural language. Obscure engineering/system jargon confuses users and degrades usability.

Q15. Interaction speeds are considered in the interface design process based on the performance and preferences of the users**A. True [✓ Verified Answer]****B. False**

Conceptual Rationale: System response rates, animation pacing, and input timings (e.g. mouse click thresholds, key repeat rates) are customized to align with human motor performance and user preferences.

Q16. The main goal of a Web Page Design is to collect and process data.**A. True****B. False [✓ Verified Answer]**

Conceptual Rationale: The primary goal of a Web Page is to provide and present information. It is the goal of a Web Application to collect and process data.

Q17. The main goal of a Web Application Design is to provide information.**A. True****B. False [✓ Verified Answer]**

Conceptual Rationale: The primary goal of a Web Application is to facilitate tasks, collect input, and process data. Providing static information is the role of a web page.

Unit 03: Screen Design, Visual Clarity & Component Ordering

Q1. Which of the following statement is not a design issue affecting electronic forms and web forms?**A. Misleading headings****B. Cluttered and Cramped layout****C. Improper type and graphic emphasis****D. Screen navigation and flow [✓ Verified Answer]**

Conceptual Rationale: Misleading headings, cluttered/cramped layouts, and improper emphasis are recognized design flaws/problems. In contrast, Screen navigation and flow is a fundamental design principle and functional objective, not an inherent design issue/defect.

Q2. Which of the following statement is not a requirement of a user from a screen?**A. The appearance should be cluttered and orderly. [✓ Verified Answer]****B. Information should be located where expected.****C. There should be a clear indication of the relationships between elements.****D. The language used should be plain, simple English.**

Conceptual Rationale: Users require an uncluttered, clean, and orderly screen. A "cluttered" appearance is a severe usability flaw that increases cognitive load and error rates.

Q3. Which of the following is not a task performed by a user when interacting with a computer?**A. Identification of a task to be performed.****B. Making a decision on a method to complete a task.****C. Testing the above method after deciding [✓ Verified Answer]****D. Changing the computer's controls as required.**

Conceptual Rationale: In the standard user interaction loop, users identify the task, select a method/action, and execute it by manipulating the system controls. Formally "testing the method" is an evaluation activity conducted by system designers/usability engineers, not an end-user interaction task.

Q4. Which of the following is not a benefit of consistency in screen design?**A. Reduction in task completion and learning times****B. Increase in user satisfaction.****C. It also aids learning.****D. It enhances attention level of the user. [✓ Verified Answer]**

Conceptual Rationale: The primary purpose of consistency is to reduce cognitive strain by making interactions automatic and predictable. It frees the user from needing hyper-vigilance or heightened attention levels on the interface itself, allowing them to focus entirely on their underlying task.

Q5. People often read Web pages in an ____ shaped pattern.

- A. D
- B. T
- C. F [✓ Verified Answer]**
- D. L

Conceptual Rationale: Jakob Nielsen's classic eye-tracking research demonstrated that web users scan text-heavy web pages in an F-shaped pattern: two horizontal eye movements followed by a vertical sweep down the left margin.

Q6. Which of the below is not correct with reference to ordering of the screen components.

- A. Frequency of use
- B. Time of use [✓ Verified Answer]**
- C. Sequence of use
- D. Importance

Conceptual Rationale: Wilbert O. Galitz specifies that screen components and data must be ordered by: - Sequence of use (workflow order) - Frequency of use (most popular items first) - Importance (critical controls highlighted) - Functional relationships "Time of use" is not a standard interface ordering principle.

Q7. The most important and frequently used elements or controls should be located at the ____

- A. top left [✓ Verified Answer]**
- B. top right
- C. bottom left
- D. bottom right

Conceptual Rationale: In Western cultures (reading left-to-right, top-to-bottom), visual scanning begins at the top left (the Gutenberg Primary Optical Area). Placing the most important and frequently used controls at the top left ensures immediate discovery and rapid access.

Q8. The quality of a screen design to provide an equal weight of the screen elements on the left and right, top, and bottom of the screen is known as,

- A. Balance
- B. Symmetry
- C. Regularity
- D. Proportion [✓ Verified Answer]**

Conceptual Rationale: According to the specific syllabus/portal key, Proportion is designated for the equal/harmonious distribution of weight of screen elements on left/right and top/bottom.

Q9. The quality of a screen design of getting the message on the screen easily by the usage of fewer font styles and colors is known as,

- A. Sequentiality
- B. Simplicity
- C. Economy [✓ Verified Answer]**
- D. Groupings

Conceptual Rationale: Economy is the design discipline of frugality—conveying the necessary information using minimal visual means, specifically by restricting font styles, type sizes, line styles, and color palettes.

Q10. Title, Field Captions, Headings and Navigation are the screen elements considered while testing for a good screen design.

- A. true [✓ Verified Answer]**
- B. false

Conceptual Rationale: Evaluating screen clarity involves systematically testing all structural elements—including window titles, section headings, field captions, and navigation controls—for consistency and location predictability.

Q11. The useful information on the screen is known as data and the information on the screen without a purpose is called noise.

- A. true
- B. false [✓ Verified Answer]**

Conceptual Rationale: This statement is evaluated as false because in information architecture, raw screen inputs are "data", whereas processed, structured, and useful content presented to the user is defined as "information" (not mere data). Therefore, defining useful information as "data" is technically inverted/false.

Q12. Visual clarity is not affected by logical and sequential ordering of the elements on the screen.

A. true

B. false [✓ Verified Answer]

Conceptual Rationale: Visual clarity is heavily dependent upon logical and sequential ordering. Illogical arrangements force erratic visual scanning and severely degrade comprehension.

Q13. Graphical displays change a person's scanning behavior due to the visual cues like color, depth, form, and the movement they provide.

A. true [✓ Verified Answer]

B. false

Conceptual Rationale: Graphical interfaces replace linear reading patterns with non-linear, pre-attentive visual scanning directed by color pop-outs, depth, shapes, contrast, and visual hierarchy.

Q14. In regard to screen design, distinctiveness refers to the proper separation of the screen elements so that they are clearly distinguished from each other.

A. true [✓ Verified Answer]

B. false

Conceptual Rationale: Distinctiveness requires clear visual demarcation, spacing, and contrast between screen items to prevent perceptual crowding and misinterpretation.

Q15. Visual emphasis technique does not draw the attention of the users to the important part of the screen.

A. true

B. false [✓ Verified Answer]

Conceptual Rationale: By definition, visual emphasis techniques (e.g., contrasting colors, bold weights, size differentials, isolation) exist precisely to attract and focus user attention on critical screen elements.

Q16. The factors that affect an Interface Design are characteristics of the hardware being used and the interface's controlling software.

A. true [✓ Verified Answer]

B. false

Conceptual Rationale: Interface design is inherently governed and constrained by hardware capabilities (screen dimensions, display resolution, input peripherals) and underlying system/controlling software (operating system window managers, graphics rendering engines, browser platforms).

Unit 04: Menus, Windows, Controls, Text & Color Design

Q1. Which of these is not a Menu type based on its structure?

A. Sequential Linear Menu

B. Complex Menu [✓ Verified Answer]

C. Simultaneous Menu

D. Connected Menu

Conceptual Rationale: Wilbert O. Galitz classifies menu structures into: Single Menus, Sequential Linear Menus, Simultaneous Menus, Hierarchical Menus, Connected Menus, and Event-Trapping Menus. "Complex Menu" is not a recognized structural menu type.

Q2. Which of these is not a function of the Menu?

A. Execute an action or procedure

B. Displaying an information

C. Browsing [✓ Verified Answer]

D. Input data or parameters

Conceptual Rationale: Galitz identifies four formal functions of menus: (1) Navigation to a new menu, (2) Execute an action or procedure, (3) Displaying information, and (4) Data or parameter input. Unstructured "Browsing" is not defined as a primary menu function.

Q3. Textual lists with less than ____ menus should be ordered based on the Sequence of occurrence.

- A. 7 [✓ Verified Answer]**
- B. 8
- C. 9
- D. 10

Conceptual Rationale: Galitz recommends that for short textual lists (seven or fewer items), items should be ordered by sequence of occurrence, frequency of occurrence, or importance. Lists with eight or more items should typically be ordered alphabetically.

Q4. Not more than ____ groupings should be presented on a single screen.

- A. Five
- B. Six
- C. Seven [✓ Verified Answer]**
- D. Eight

Conceptual Rationale: Aligning with George Miller's psychological chunking limit (7 ± 2), Galitz's screen organization rules dictate that designers should provide no more than seven distinct groupings on a single screen to prevent working memory overload.

Q5. Which of these is not a menu element?

- A. Context
- B. Name [✓ Verified Answer]**
- C. Choice Descriptions
- D. Completion Instructions

Conceptual Rationale: Galitz defines the four standard elements of a menu as: Context, Title (not "Name"), Choice Descriptions, and Completion Instructions.

Q6. Without logical groupings of elements, choices should be ranging from,

- A. 4 to 8. [✓ Verified Answer]**
- B. 5 to 10
- C. 6 to 12
- D. 7 to 14

Conceptual Rationale: When menu choices cannot be organized into meaningful logical groupings, Galitz recommends keeping the list small—specifically restricted to 4 to 8 choices.

Q7. Which of the following statement is not true about Windows?

- A. It cannot be moved independently on the screen [✓ Verified Answer]**
- B. It can have a single message or a field
- C. It can have one or more windows within itself
- D. It is rectangular in shape defined by a border

Conceptual Rationale: A core feature of windowing systems is that a window can be moved independently across the display space.

Q8. Which of the following is not a characteristic of Windows?

- A. It has a name or title for identification.
- B. It has a variable size (in height and width).
- C. Only passive window contents are editable. [✓ Verified Answer]**
- D. The contents of the window can extend beyond its display area.

Conceptual Rationale: Only the active window accepts user input and allows editing of contents. Passive (inactive) windows do not allow active user editing until focused.

Q9. Which of these is not a function of Windows?

- A. Presentation of different levels of information.
- B. Performing a single task. [✓ Verified Answer]**
- C. Presentation of multiple kinds of information.
- D. Combining different sources of information.

Conceptual Rationale: Windows are designed specifically for concurrent performance of functions and multitasking (performing multiple tasks), not merely a single task.

Q10. The factors contributing to the design of windows are,

- A. Historical Considerations
- B. Human Considerations
- C. Hardware Limitations
- D. All the above [✓ Verified Answer]**

Conceptual Rationale: Window design is shaped by evolutionary historical systems, human cognitive/visual constraints, and physical hardware/display capabilities.

Q11. Title bar is also called,

- A. Caption
- B. Caption bar
- C. Title area
- D. All the above [✓ Verified Answer]**

Conceptual Rationale: In GUI documentation and Microsoft Windows standards, the title bar is interchangeably called the caption, caption bar, or title area.

Q12. Which of these is not a characteristic of the Windows status bar?

- A. In Microsoft windows this is located at the top of a window [✓ Verified Answer]**
- B. It is used to display information about the current state of what is shown in the window.
- C. It can be a descriptive message about a selected menu or toolbar button
- D. It may also be used to explain menu and control bar items as the items are highlighted by the user.

Conceptual Rationale: In Microsoft Windows, the status bar is located at the bottom of the window, never at the top.

Q13. The principles on which the screen-based controls are created are:

- A. A control must look the way it works.
- B. A control must work the way it looks.
- C. It must be presented in a standard manner.
- D. All the above [✓ Verified Answer]**

Conceptual Rationale: Screen-based controls rely on visual affordances (look how they work), intuitive behavior (work how they look), and standardization (consistency).

Q14. The rules given by Microsoft Windows for controls are,

- A. Elements that appear raised on the screen can be pressed.
- B. Elements that are recessed cannot be pressed.
- C. Elements that are presented on a flat white background can be opened, edited, or moved.
- D. All the above [✓ Verified Answer]**

Conceptual Rationale: These are Microsoft's foundational 3D visual language rules: raised = pressable button; recessed = sunken container/pressed state; flat white = editable canvas/data field.

Q15. The operable controls on the screen are:

- A. Buttons.
- B. Text entry.
- C. Selection.
- D. All the above. [✓ Verified Answer]**

Conceptual Rationale: Galitz categorizes interactive screen controls into buttons, text entry controls, and selection controls.

Q16. The following are the selection controls:

- A. Radio button
- B. Check box
- C. List Box
- D. All the above [✓ Verified Answer]**

Conceptual Rationale: Radio buttons, check boxes, and list boxes are the primary standard selection controls.

Q17. The factors on which the selection of the proper control depends are:

- A. The nature of the task.
- B. The nature of the user.
- C. The limitations of the display screen.
- D. All the above [✓ Verified Answer]**

Conceptual Rationale: Selecting an optimal control requires evaluating task demands (data type, mutual exclusivity), user skill levels, and display real estate constraints.

Q18. Readability is determined by the following factors:

- A. Word length
- B. Word commonality
- C. Sentence length
- D. All the above [✓ Verified Answer]**

Conceptual Rationale: Standard readability indices evaluate word length (syllables), vocabulary commonality/frequency, and syntactic sentence length.

Q19. The reading formulae are based on,

- A. The number of syllables or (letters) in a word.
- B. The number of words in a sentence.
- C. Both a and b [✓ Verified Answer]**
- D. Only a

Conceptual Rationale: Formulas like Flesch-Kincaid use word length (syllables/letters per word) and sentence length (words per sentence).

Q20. Guidelines for using sentences and messages on the screen must be:

- A. Limited to no more than twenty words per sentence.
- B. Limited to no more than six sentences per paragraph.
- C. Written at an eighth-grade level or less for the general population.
- D. All the above [✓ Verified Answer]**

Conceptual Rationale: Galitz's clear writing rules recommend ≤ 20 words per sentence, ≤ 6 sentences per paragraph, and an 8th-grade reading level.

Q21. The characteristics of an Icon are:

- A. Syntactics
- B. Semantics
- C. Pragmatics
- D. All the above [✓ Verified Answer]**

Conceptual Rationale: In semiotics, visual signs are defined by Syntactics (physical visual form), Semantics (underlying meaning), and Pragmatics (practical contextual usage).

Q22. Which of the following statements is not true about icon design guidelines?

- A. Each icon should be unique and not similar to any other icon.
- B. They should not use colors from the system palette. [✓ Verified Answer]**
- C. Even in a small 16-pixel square, it should be recognizable.
- D. Every icon should clearly indicate its action.

Conceptual Rationale: Standard GUI icon guidelines require icons to use colors from the unified system palette to avoid dithering and ensure cross-platform visual consistency.

Q23. The following are the factors to be considered when choosing colors for the display:

- A. The human visual system
- B. The display environment
- C. User task
- D. All the above [✓ Verified Answer]**

Conceptual Rationale: Color selection must account for human physiology (color blindness, eye strain), environmental ambient lighting, and functional task requirements.

Q24. Event-trapping menus are a set of simultaneous menus imposed on hierarchical menus. State whether true or false

A. True [✓ Verified Answer]

B. False

Conceptual Rationale: Verbatim definition from Galitz: Event-trapping menus provide simultaneous contextual access while navigating hierarchical structures.

Q25. Number of menu choices presented on the screen can be unlimited. State Whether True or False

A. True

B. False [✓ Verified Answer]

Conceptual Rationale: Menu choices must always be bounded and structured; unlimited choices cause decision paralysis and extreme visual scanning latency.

Q26. Phrasing the menu means writing the content of menu components, the menu's title, the choice descriptions, and instructions. State Whether True or False

A. True [✓ Verified Answer]

B. False

Conceptual Rationale: In Galitz Step 4, "Phrasing the menu" is the explicit process of drafting titles, item labels, and interaction instructions.

Q27. In Web applications or web page design, buttons can be used to cause an action to occur and to retrieve or show information. State whether true or false.

A. True

B. False [✓ Verified Answer]

Conceptual Rationale: According to Galitz and classic Web design guidelines, buttons must be used strictly to cause an action, execute a procedure, or submit data. In contrast, text links (hyperlinks) are used to retrieve or show information. Using buttons to navigate or retrieve information violates fundamental web affordance design standards.

Q28. Jargon, words, and terms whose meaning is not understood by a computer professional should not be used. State whether the above statement is true or false with reference to choosing words on the interface screen.

A. True [✓ Verified Answer]

B. False

Conceptual Rationale: The portal evaluates this statement as True, establishing that esoteric jargon or specialized vocabulary that is obscure even to a computer professional should strictly never be placed on the screen.

Q29. The guidelines for writing the text are divided into two parts sentences and paragraphs, and Style. State whether the above statement is true or false

A. True [✓ Verified Answer]

B. False

Conceptual Rationale: Galitz structures text guidelines into structural mechanics (Sentences and Paragraphs) and linguistic presentation (Style and Tone).

Q30. The main objective of multimedia should be good interaction design and not a "sparkle only" added to a screen. State whether true or false.

A. True [✓ Verified Answer]

B. False

Conceptual Rationale: Multimedia must provide functional cognitive value and support task execution rather than serving as gratuitous decoration or "sparkle".

Q31. For developing a three-dimensional look on a screen, at least nine to ten colors or color values are used. State whether true or false.

A. True

B. False [✓ Verified Answer]

Conceptual Rationale: Standard 3D GUI visual affordances use a restrained palette of 3 to 5 tone values (highlight, light, face, shadow, dark shadow). Using 9 to 10 colors violates color economy principles.

Q32. A 216-color and browser-safe color palette should be used for designing a web page. State whether true or false.

A. True [✓ Verified Answer]

B. False

Conceptual Rationale: The classic 216-color Web-safe palette was universally standardized to ensure non-dithered rendering across all 8-bit color displays and browsers.

Unit 05: Specification Methods, Input Devices & Interaction Tasks

Q1. The specification technique/techniques used to describe an HCI are:

A. State transition diagrams

B. Backus normal form

C. Both a and b [✓ Verified Answer]

D. Only a

Conceptual Rationale: In formal HCI dialogue specification (Ben Shneiderman), Backus-Naur Form (BNF) / Backus normal form is used for specifying syntactic/textual command sequences, while State Transition Diagrams (STDs) are used to specify dynamic state changes, user events, and interface navigation flows.

Q2. The different specification methods used are:

A. Dialog box trees

B. Transition trees

C. State charts

D. All the above [✓ Verified Answer]

Conceptual Rationale: Standard interface specification methods include: - Dialog box trees: Representing the hierarchical relationships and invocations between dialog windows. - Transition trees: Augmented transition networks representing valid action pathways. - State charts: Harel's statecharts modeling concurrency, nesting, and history in visual interfaces.

Q3. Features of interface building tools are:

A. User interface independence

B. Methodology and notation

C. Rapid prototyping

D. All the above [✓ Verified Answer]

Conceptual Rationale: User Interface Management Systems (UIMS) and interface builders provide UI independence (decoupling the UI layer from underlying application algorithms), standardized design notations, and rapid visual prototyping facilities.

Q4. The layouts of the keyboard are:

A. QWERTY

B. Dvorak

C. ABCE style

D. All the above [✓ Verified Answer]

Conceptual Rationale: Shneiderman's survey of physical input devices highlights: - QWERTY: The classic mechanical typewriter layout. - Dvorak: The frequency-optimized layout placing common vowels and consonants on the home row. - ABCE / Alphabetic: Layout arranged alphabetically to assist novice or young typists.

Q5. The keys use a _____ gram force.

A. 40 - 50

B. 40 - 125 [✓ Verified Answer]

C. 50 - 150

D. 40 - 200

Conceptual Rationale: In Ben Shneiderman's Designing the User Interface (Physical Design and Keyboards): standard ergonomic computer keyboard keys require an actuation force between 40 and 125 gram-force and a physical travel displacement of 3 to 5 mm.

Q6. Dragging and dropping a block of text in a figure is _____ type of interaction task performed by a pointing device.

- A. Selection
- B. Positioning [✓ Verified Answer]**
- C. Orientation
- D. None of the above

Conceptual Rationale: In Foley, Wallace, and Chan's interaction task taxonomy (cited in Shneiderman): Positioning involves moving a visual object to a 1D, 2D, or 3D coordinate destination. Dragging and dropping text or graphic blocks places them at a specific target position.

Q7. The task where the users perform a series of positioning and orientation operations is a _____ type of interaction task performed by a pointing device.

- A. Positioning
- B. Orientation
- C. Path tracing [✓ Verified Answer]**
- D. None of the above

Conceptual Rationale: Path tracing (or Path creation) involves executing an ongoing, connected sequence of rapid positioning and orientation movements—such as freehand drawing, signature capture, or tracing an outline.

Q8. Which of these is not a direct controlled pointing device?

- A. LightPen
- B. Mouse [✓ Verified Answer]**
- C. Touchscreen
- D. Stylus

Conceptual Rationale: In direct pointing devices (Touchscreen, Stylus, LightPen), the physical input occurs directly on the visual display at the target's location. A mouse is an indirect pointing device because it is manipulated on a separate desktop surface while cursor movement is viewed on the screen.

Q9. Which of these is not an indirect-controlled pointing device?

- A. LightPen [✓ Verified Answer]**
- B. Joystick
- C. Trackball
- D. Touchpad

Conceptual Rationale: A LightPen requires touching the tip directly to the screen surface (direct input). Joysticks, trackballs, and touchpads are all indirect pointing devices operated away from the screen display surface.

Q10. The technologies used for speech recognition are:

- A. Discrete-word recognition
- B. Continuous-speech recognition
- C. Voice information systems
- D. All the above [✓ Verified Answer]**

Conceptual Rationale: Classical speech processing encompasses discrete-word systems (isolated utterances), continuous-speech systems (natural running sentences), and voice information systems (interactive voice response, speech synthesis).

Q11. Specification methods are design methods that help in designing command languages, data-entry structures, and widgets. State whether true or false.

- A. True [✓ Verified Answer]**
- B. False

Conceptual Rationale: Formal specification techniques allow system architects to define grammar rules for command syntax, field layouts for data entry, and interaction states for GUI widgets before writing production code.

Q12. With reference to the design issues in mobile device displays, reading on small screens may be improved with rapid serial visual presentation (RSVP) where the text is presented at a constant speed. State whether true or false

- A. True [✓ Verified Answer]**
- B. False

Conceptual Rationale: RSVP (Rapid Serial Visual Presentation) flashes words or phrases sequentially at a fixed position on screen, eliminating the need for horizontal/vertical scanning or manual scrolling on limited screen real estate.

Q13. RIM blackberry or Pocket PC is used for general-purpose entertainment. State whether true or false

A. True

B. False [✓ Verified Answer]

Conceptual Rationale: Early handheld mobile devices like the RIM BlackBerry and Pocket PC (PDAs) were designed and optimized specifically for enterprise productivity, business communication, and email, not general-purpose consumer entertainment.

Q14. Cognitive load in speech recognition systems is less compared to pointing devices. State whether true or false

A. True

B. False [✓ Verified Answer]

Conceptual Rationale: Speech interaction imposes a higher cognitive load than pointing devices because speech requires active recall of vocabulary and syntax (high memory retrieval demand), verbal working memory involvement, and conscious acoustic error monitoring, whereas pointing relies on passive visual recognition and muscle memory.

Q15. Trackball is also called an upside-down mouse. State whether true or false

A. True [✓ Verified Answer]

B. False

Conceptual Rationale: In hardware design literature, a trackball is functionally described as an upside-down mechanical mouse: the tracking ball sits exposed on the top surface of a stationary base, rotated directly by the operator's fingers or palm.