

# Module1:

## Multiple Choice Questions with Answers

1. Which of the following computing systems is described as "alive and well" and "an expanding presence in our lives"?

- A) Mainframes
- B) Graphical User Interfaces
- C) Augmented Reality
- D) Desktops**

2. What are most businesses still dependent on?

- A) Virtual Reality systems
- B) Graphical User Interfaces
- C) Cloud Computing
- D) Old-fashioned computing systems**

3. Where are web addresses commonly found?

- A) Only on social media platforms
- B) In printed advertisements and magazines**
- C) Exclusively on gaming consoles
- D) Embedded within smartphone apps

4. What are some tasks associated with "doing computing"?

- A) Virtual reality gaming
- B) Developing AI algorithms
- C) Word processing and database management**
- D) Building mobile apps

5. What will we still need to focus on for years to come?

- A) Developing advanced quantum computing
- B) Creating new operating systems
- C) Basic computing applications and interaction styles**

D) Automation of all computing tasks

6. What term describes the expansion of computing into everyday objects and environments beyond traditional devices?

**A) Internet of Things**

B) Virtual Reality

C) Cloud Computing

D) Augmented Reality

7. What is a characteristic of "**wearable computers**" as described in the text book?

A) They require traditional user interfaces like keyboards and mice

B) They are embedded within appliances and entertainment systems

**C) They can be strapped onto a person's clothing or worn on the body**

D) They are exclusively used in office environments

8. What are "**Smart-its**" devices equipped with to enhance everyday physical world artifacts?

**A) Sensors, actuators, and wireless communication**

B) Advanced graphical interfaces

C) Quantum processors

D) Augmented reality displays

9. How can machine-readable identifiers on everyday objects be utilized?

A) To control robots

**B) To remotely track changes in those objects**

C) To play virtual reality games

D) To replace traditional keyboards

10. Which of the following is an example of how embedded computing can be used in daily life, as described in the passage?

A) Tracking car keys

B) Monitoring heart rate during exercise

C) Remotely controlling a refrigerator's temperature

**D) Sending alerts about low milk supply**

11. According to Cooper (2004), what is not necessary for interaction in ubiquitous computing contexts?

- A) Traditional user interfaces**
- B) Wireless communication
- C) Sensory receptors
- D) Virtual reality devices

12. What is a practical application of ubiquitous computing mentioned in the passage?

- A) Virtual reality gaming
- B) Smart railcars monitoring their location and status**
- C) Cloud-based document storage
- D) AI-driven personal assistants

13. What is the goal of using sensate media arranged as surfaces with dense sensor networks, as described in the text?

- A) Enhancing virtual reality experiences
- B) Emulating living, sensitive tissue in applications like robotics and prosthetics**
- C) Creating immersive video games
- D) Developing advanced graphical user interfaces

14. Which research lab is mentioned in relation to the development of sensate media for distributed computing applications?

- A) Xerox PARC**
- B) Google Research
- C) IBM Research
- D) Apple Labs

15. What is the MIT Media Lab's Tribble described as in the passage?

- A) A new type of robot
- B) A testbed using dense sensor networks**
- C) A virtual reality simulation

D) A cloud computing platform

16. What type of applications are gaining numbers beyond housecleaning and babysitting?

A) Augmented reality

B) Virtual reality

C) Wearable computing

**D) Robotic applications in healthcare and specialized fields**

17. Which group is using robotic products to assist the elderly, as mentioned in the passage?

A) Xerox PARC

B) Google Research

C) MIT Media Lab

**D) Forlizzi**

18. In what context are robotic rover vehicles being used, according to the passage?

A) Urban construction

B) Underwater exploration

**C) Unmanned space missions**

D) Military operations

19. What is a key benefit of using robotic devices for urban search and rescue?

A) Reduced cost of operations

B) Enhanced efficiency in cleaning tasks

**C) Improved safety in hazardous environments**

D) Increased reliance on manual labor

20. What application uses embedded computing to encourage severely disabled children to interact with their environment?

A) Smart-its

B) Wearable computing

C) Sensate media

**D) Robotic products for healthcare**

21. What is a significant advantage of embedding computing into everyday objects, as discussed in the passage?

- A) Increased reliance on traditional user interfaces
- B) Enhanced cost savings and efficiency**
- C) Decreased need for wireless communication
- D) Elimination of wearable computing

22. What type of computing initiative is described as an expansion beyond traditional user interfaces and the Web?

- A) Cloud Computing
- B) Wearable Computing
- C) Graphical User Interfaces
- D) Ubiquitous Computing**

23. How are mobile computing elements combined in the 2Wear project?

- A) Through long-distance wired communication
- B) Through short-distance wireless communication**
- C) Through virtual reality interfaces
- D) Through embedded graphical user interfaces

24. Which project involves self-reconfiguring artifacts with sensing, processing, and communication abilities?

- A) 2Wear project
- B) eGadget project**
- C) MIT Media Lab's Tribble
- D) Smart-its

25. What was the goal of instrumenting volunteer soldiers with sensors in the MIT project?

- A) To monitor heart rate during exercise
- B) To detect the onset of hypothermia**

- C) To remotely control their clothing
- D) To enhance virtual reality experiences

26. What are examples of objects that might be embedded with computing elements?

- A) Refrigerators and grocery items
- B) Furniture and walls
- C) Shoes and briefcases
- D) All of the above**

27. Which technology allows remote polling of a refrigerator using a mobile phone to determine grocery needs?

- A) Machine-readable identifiers**
- B) Augmented reality
- C) Cloud-based computing
- D) Virtual reality

28. What is the primary characteristic of "Smart-its" devices?

- A) They contain advanced virtual reality displays
- B) They enhance everyday physical world artifacts with additional functionality**
- C) They require traditional user interfaces
- D) They are only used in research labs

29. What is an example of a proof-of-concept application?

- A) Virtual reality gaming systems
- B) Cloud-based document storage
- C) Robotic systems for healthcare rehabilitation**
- D) Smart railcars monitoring their location

30. Which term describes computer systems being worn by people and embedded within everyday objects, according to the passage?

- A) Internet of Things**

- B) Virtual Reality
- C) Cloud Computing
- D) Robotics

31. Which scientist is associated with the concept of ubiquitous computing and wearable computers?

- A) Mark Weiser**
- B) Alan Cooper
- C) Donald Norman
- D) Bill Buxton

32. Which project involves self-reconfiguring artifacts with sensing, processing, and communication abilities, as led by Kameas & Mavrommati?

- A) 2Wear project
- B) eGadget project**
- C) MIT Media Lab's Tribble
- D) Smart-its

33. Who developed the concept of "Smart-its," which are embedded devices enhancing physical world artifacts?

- A) Mark Weiser
- B) Bill Gershman
- C) Albrecht Schmidt
- D) Hans Gellersen**

34. In which project did MIT volunteers wear sensors to monitor physiological parameters like heart rate and body temperature?

- A) 2Wear project
- B) eGadget project
- C) MIT Media Lab's Tribble**
- D) Smart-its

35. What technology was used in a project at MIT to remotely track changes in everyday objects like milk and groceries?

- A) Augmented Reality
- B) Machine-readable identifiers**
- C) Virtual Reality
- D) Cloud Computing

36. Who led the project at MIT focusing on sensate media and dense sensor networks for applications like robotics and prosthetics?

- A) Steve Jobs
- B) Hiroshi Ishii**
- C) Bill Gates
- D) Ramesh Raskar

37. What kind of testbed is the MIT Media Lab's Tribble, as described in the passage?

- A) A virtual reality simulation
- B) A robotic device
- C) A platform using dense sensor networks**
- D) A cloud computing experiment

38. Who conducted research on robotic applications for healthcare rehabilitation, focusing on encouraging interaction for severely disabled children?

- A) Hiroshi Ishii
- B) Albrecht Schmidt
- C) Leah Buechley**
- D) Erin Rapacki

39. Which scientist is associated with the development of proof-of-concept applications using sensate media for robotics and telemedicine applications?

- A) Joe Paradiso**
- B) Donald Norman
- C) Bill Gershman
- D) Alan Cooper



40. Who led the MIT project involving wearable computing elements to monitor physiological parameters of volunteer soldiers?

- A) Steve Jobs
- B) Joseph Paradiso**
- C) Eric Whitacre
- D) Isaac Asimov

41. What concept does Mark Weiser emphasize in relation to computing?

- A) The persistence of desktop computing
- B) The importance of virtual reality interfaces
- C) The ubiquity of computing beyond traditional devices**
- D) The complexity of machine learning algorithms

42. What does Tscheligi (2005) paraphrase from Mark Weiser regarding computing?

- A) "The world is a desktop."
- B) "The world is not a desktop."**
- C) "Desktops are disappearing."
- D) "Computing is obsolete."

43. What area of computing is described as perhaps the fastest-growing in terms of ubiquitous computing?

- A) Desktop computing
- B) Virtual reality interfaces
- C) Mobile communications**
- D) Cloud-based computing

43. According to Clubb (2007) and other researchers, what is a key focus in the area of mobile communications and ubiquitous computing?

- A) Developing faster desktop computers
- B) Designing for a quality user experience**

- C) Exploring virtual reality environments
- D) Implementing cloud-based gaming

44. How do Russell, Streit, and Winograd (2005) describe the "disappearing computer"?

- A) Computers are becoming obsolete
- B) Computers are departing from everyday use
- C) Computers are becoming unobtrusive and unremarkable**
- D) Computers are vanishing from the market

45. What term describes the goal of making computers unobtrusive within our living and working spaces?

- A) Ambivalent computing
- B) Virtual reality computing
- C) Ambient intelligence**
- D) Machine learning

46. Where is the HomeLab of Philips Research located, which focuses on ambient intelligence technology?

- A) United States
- B) United Kingdom
- C) Germany
- D) Netherlands**

47. What is the primary goal of ambient intelligence technology in everyday social interactions, according to researchers at Philips?

- A) Mediating arguments
- B) Permeating daily activities
- C) Becoming inseparable from human interactions**
- D) Enhancing leisure activities

48. What does the term "ambient intelligence" refer to in the context of embedded systems?

- A) Making computers invisible
- B) Making systems unobtrusive

**C) Making interaction seamless within environments**

D) Making technology ubiquitous

49. How is interaction with embedded computing described in relation to user experience?

A) Interaction becomes unnecessary

**B) Usability remains important despite invisibility of computers**

C) Interaction is limited to traditional interfaces

D) Usability becomes irrelevant

50. What alternative form of human-computer interaction is suggested by Kaye (2004) based on underused human senses?

A) Visual interaction

**B) Olfactory interaction**

C) Auditory interaction

D) Haptic interaction

51. According to the English definition of "interaction" adapted from Dictionary.com, what does interaction involve?

**A) Mutual action, effect, or influence**

B) Solely computer-mediated communication

C) Direct human-computer engagement

D) User input without system response

52. What does user input cause within a system, according to the concept of interaction?

A) System shutdown

**B) Change in the internal system state**

C) Change in the user's environment

D) Deactivation of the system

53. What kind of user input can be extracted by an environment without deliberate action by the user?

A) Visual input

B) Auditory input

- C) Tactile input
- D) Proactive input**

54. What is a "smart wall" capable of, as described in the passage?

- A) Changing colors
- B) Sensing user presence and extracting inputs**
- C) Emitting sounds
- D) Displaying holographic images

55. What kind of interaction is described when a system controls inputs by sensing the user's environment?

- A) Human-controlled interaction
- B) Proactive interaction
- C) Automated system operation**
- D) Environmental interaction

56. What external changes can an automated system make based on sensed inputs?

- A) Adjust system settings
- B) Alter the user's environment
- C) Change internal system parameters
- D) Both A and B**

57. What does **road signage** serve as in the context of interaction?

- A) A user interface label**
- B) A computer message
- C) A physical barrier
- D) A virtual reality simulation

58. How do drivers respond to road signage within the larger highway system,?

- A) By stopping
- B) By taking driving actions**
- C) By ignoring the signage
- D) By reporting to authorities

59. What is the focus of much of the material discussed in the text book beyond traditional HCI (Human-Computer Interaction)?

- A) Human-robot interaction
- B) Human-world interaction**
- C) Human-machine interaction
- D) Human-virtual reality interaction

60. What is an example of human-world interaction mentioned in the passage?

- A) Interacting with ATMs**
- B) Virtual reality gaming
- C) Teleporting through digital spaces
- D) Conducting web searches

61. What does the term "interaction" encompass beyond traditional HCI, according to the passage?

- A) Only human-computer engagement
- B) Only user-directed actions
- C) Both human-machine and human-world interactions**
- D) Only machine-mediated communication

62. What aspect of interaction implies a shared context or environment between system and user?

- A) Mutual action
- B) System response
- C) External influence
- D) Contextual interaction**

63. What does user input to a system often direct interaction toward?

- A) Machine learning
- B) Virtual reality simulations
- C) A goal**
- D) Environmental changes

64. How can user-related inputs be extracted by an environment without conscious action by the user?

- A) Through direct user engagement
- B) Through sensory recognition**
- C) Through haptic feedback
- D) Through verbal commands

65. Who is credited with the quote "the world is not a desktop"?

- A) Alan Cooper
- B) Bill Buxton
- C) Mark Weiser**
- D) Donald Norman

66. Which term describes the phenomenon where computers become unobtrusive and seamlessly integrated into daily life?

- A) Virtual reality computing
- B) Ambient intelligence**
- C) Cloud-based computing
- D) Machine learning

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75. In the early days of computing, poor usability was seen as:

- a. A barrier to protect the craft from outsiders
- b. A way to increase job security
- c. Good for the mystique
- d. All of the above**

76. The term "dancing bear" software refers to:

- a. Software that is exceptionally well-designed
- b. Software with great features but poor interaction design**
- c. Software that is easy to use
- d. Software that is visually appealing

77. According to the passage, the general public and the press were slow to realize that:

- a. Computer usage was becoming more widespread
- b. They could demand better user experience**
- c. Software companies were not prioritizing usability
- d. Poor design was often blamed on user error

78. The example of the voting machine issues in Florida illustrates:

- a. The importance of properly training users
- b. The failure to recognize the role of user experience in design
- c. The confusion caused by poorly designed systems
- d. Both b) and c)**

79. Douglas Adams's observation about airport design suggests that:

- a. Airports are intentionally designed to be confusing and unpleasant
- b. Poor design can be so baffling that users assume it must be intentional**
- c. Architects prioritize functionality over aesthetics
- d. All of the above



80. According to the author of text book, people now look for technology to provide:

- a. Sheer functionality and usability
- b. Beauty, emotional satisfaction, and intellectual gratification
- c. Meaning in what they do
- d. **Both b) and c)**

81. The "warranty" quoted in the textbook suggests that:

- a. Software companies do not care about quality
- b. Users have no recourse for defective software
- c. Software is provided without any guarantees
- d. **All of the above**

82. The case study of the emergency-response system for the San Jose Police Department highlights:

- a. The importance of involving users in the design process
- b. The risks of focusing solely on functionality and cost
- c. The potential for severe consequences due to poor user experience
- d. **All of the above**

83. The emergency-response system case study suggests that:

- a. User feedback is crucial for improving subsequent versions
- b. Extensive training can compensate for poor design
- c. User experience considerations can complicate the design process upfront
- d. **Both a) and c)**

84. According to the passage, prioritizing quality user experience can benefit:

- a. Customers and users
- b. UX practitioners and designers
- c. Marketing people and the public
- d. **All of the above**

85. According to the traditional concept, usability refers to aspects of human-computer interaction that ensure:

- a. Efficiency and effectiveness
- b. Satisfaction for the user
- c. **Both a) and b)**
- d. None of the above

86. Which of the following is NOT a characteristic of usability?

- a. Ease of use
- b. Productivity
- c. Visual appeal**
- d. Learnability

87. Usability is NOT about:

- a) Making things "user-friendly"
- b) Trivializing the design process
- c) Conducting usability testing
- d) Both a) and b)**

88. The field of interaction design has evolved from a focus on:

- a) User experience
- b) Usability and user performance**
- c) Aesthetics and ambience
- d) Social and cultural context

89. Traditional definitions of usability focused more on:

- a) Emotional impact
- b) Intellectual responses
- c) User satisfaction
- d) Both b) and c)**

90. Which is an example highlighting the importance of user experience over functionality?

- a) iPhone vs Android
- b) iPhone vs Blackberry**
- c) Apple vs Microsoft
- d) BMW vs Mercedes

91. According to the passage, a good user experience is necessarily linked to:

- a) High-tech products
- b) Cool and trendy technology
- c) Innovative design
- d) None of the above**

92. The example of Microsoft's packaging design highlights:

- a) Violation of design conventions
- b) Poor affordances

- c) Difficulty for actual users
- d) **All of the above**

93. The scope of this book extends to design principles for:

- a) Only software interfaces
- b) **Any artifact satisfying usage needs**
- c) High-tech products only
- d) None of the above

94. As per the passage, usability factors like ease of use are:

- a) No longer relevant
- b) **Still vital, especially for complex work**
- c) Only relevant for software products
- d) Mainly focused on user satisfaction

95. User experience is primarily about what the user feels:

- a) Externally
- b) **Internally**
- c) Both a) and b)
- d) None of the above

96. User experience cannot be directly:

- a) Designed
- b) Engineered
- c) Developed
- d) **All of the above**

97. The example of marketing **Belgian chocolates** illustrates that user experience resides in:

- a) The product itself
- b) **The consumer**
- c) The advertising claims
- d) Both b) and c)

98. User experience can be influenced by factors beyond the product design such as:

- a) Branding and marketing
- b) Company values and practices
- c) Social and cultural aspects
- d) **All of the above**

99. Apple is highlighted as an example of a company where:
- a) Design elegance permeates everything
  - b) User experience is ingrained in corporate DNA
  - c) There is obsession with personal retail experience
  - d) **All of the above**
100. BMW's motto "Joy is BMW" emphasizes the importance of:
- a) Engineering prowess
  - b) **Emotional impact and driving pleasure**
  - c) Advanced technology
  - d) Both b) and c)
101. The broad definition of user experience recognizes that it can begin:
- a) Before actual usage
  - b) During product usage
  - c) After product usage
  - d) **Both a) and c)**
102. The breadth of the user experience definition necessitates:
- a) Clear role boundaries
  - b) **Collaboration across multiple roles**
  - c) Focus only on interaction design
  - d) None of the above
103. The broad framing aims to drive efforts towards:
- a) Usability testing
  - b) **Holistic user experiences**
  - c) Technology innovation
  - d) Visual design
104. Criticism of the broad definition stems from:
- a) **Making it hard to operationalize responsibilities**
  - b) Being too narrow in scope
  - c) Oversimplifying the concept
  - d) None of the above
105. Emotional impact refers to which aspects of interaction?
- a) Pleasure and fun
  - b) Aesthetics and novelty

- c) Sensations and experiential features
- d) All of the above**

**106.** A user's reaction to a product can range from:

- a) Mildly satisfied to deeply emotional**
- b) Annoyed to ecstatic
- c) Bored to fascinated
- d) All of the above

**107.** Some products spark a deep emotional chord akin to appreciating:

- a) Art
- b) Music
- c) Both art and music**
- d) None of the above

**108.** David Pogue used which example to illustrate the role of emotional allure?

- a) iPhone
- b) iPad**
- c) iPod
- d) MacBook

**109.** According to critics, the iPad was initially dismissed as:

- a. Too expensive
- b. Superfluous
- c. Lacking in functionality
- d. Both a) and c)**

**110.** Aesthetics moves interaction design from a utilitarian focus to:

- a. An experiential orientation**
- b. A performance orientation
- c. A functional orientation
- d. A novelty orientation

**111.** The relationship between objective aesthetic qualities and subjective emotions is:

- a. Simple and straightforward

- b. Complex**
- c. Well-defined
- d. None of the above

**112.** The same aesthetic design can evoke different emotions based on:

- a. The product's brand
- b. An individual's subjective experience**
- c. The pricing of the product
- d. The product's functionality

**113.** According to the passage, context is \_\_\_\_\_ in interpreting emotional impact.

- a. Important
- b. Irrelevant
- c. Central**
- d. Peripheral

**114.** The example of Garmin GPS illustrates how the same product is marketed differently based on:

- a. Pricing strategies
- b. Contrasting usage contexts**
- c. Regions or geography
- d. None of the above

**115.** Designing for desired user experiences requires deep understanding of:

- a. Users
- b. Context
- c. Both users and context**
- d. None of the above

**116.** The role of emotional factors like fun at work is:

- a. Well-established
- b. Debated**
- c. Clearly defined
- d. Irrelevant

117. Fun can potentially enhance appeal and performance for which type of tasks?
- a. Highly skilled tasks
  - b. Repetitive tasks**
  - c. Creative tasks
  - d. Analytical tasks
118. Fun and usability can potentially \_\_\_\_\_ in work situations.
- a. Complement each other
  - b. Conflict with each other**
  - c. Remain completely separate
  - d. None of the above
119. High-focus roles like air traffic control do not allow for:
- a. Consistency
  - b. Distractions**
  - c. Efficiency
  - d. All of the above
120. Finding the right balance between emotional and pragmatic aspects is:
- a. Unnecessary
  - b. Easy
  - c. Key**
  - d. Impossible
121. According to the text book, emotional impact is part of the:
- a. Pragmatic user experience
  - b. Holistic user experience**
  - c. Traditional usability experience
  - d. None of the above
122. Emotional impact goes beyond just:
- a. Pragmatic usability
  - b. Usefulness
  - c. Both pragmatic usability and usefulness**
  - d. None of the above

- 123.** The extent of emotional impact depends on the:
- a. User's age
  - b. User's gender
  - c. Specific usage context**
  - d. Product's pricing
- 124.** The role of emotional impact in user experience is:
- a. Well-defined and established
  - b. Still evolving**
  - c. Completely understood
  - d. Becoming less important
- 125.** Which industry figure highlighted the lack of usability and poor design in software as a significant issue?
- A) Charlie Kreitzburg
  - B) Mitch Kapor**
  - C) Keith Butler
  - D) May (1998)
- 126.** According to Charlie Kreitzburg, what is the primary cause of chaos, waste, and failure in software development?
- A) Neglect of user input
  - B) Techno-centric development practices**
  - C) Lack of budget allocation
  - D) Poor project management
- 127.** How much do poorly designed software projects cost businesses annually, according to a report by Computer World?
- A) \$50 million
  - B) \$80 billion**
  - C) \$100 million
  - D) \$150 billion
- 128.** What percentage of software projects exceed their budgets, according to estimates?



- A) 30%
- B) 60%**
- C) 80%
- D) 100%

**129.** Which group characterized the state of software development as chaotic, with a significant percentage of failed and sub-standard projects?

- A) Standish Group
- B) Gartner Group**
- C) Lotus Group
- D) Cognetics Corporation

**130.** What is one reason why a product might sell well despite having user experience problems?

- A) Strong marketing**
- B) Limited features
- C) Low pricing
- D) User complaints

**131.** What does the author caution about relying solely on sales indicators to judge user experience quality?

- A) Managers' feedback is unreliable
- B) Sales don't reflect usability**
- C) Complaints are rare
- D) Project managers are unaware of issues

**132.** Which indicator suggests potential usability and user experience issues with a product?

- A) Limited user complaints
- B) Extensive technical support calls**
- C) High pricing
- D) Minimal competition

**133.** What does the author highlight as a common substitute for addressing usability issues?

- A) Marketing campaigns
- B) User feedback

- C) **Training**
- D) Product redesign

134. Why does training as a substitute for usability often fail to meet productivity goals?

- A) It is too expensive
- B) **Users forget the training**
- C) It requires too much time
- D) Users prefer not to be trained

135. When did conferences about computer usability begin to emerge?

- A) 1950s
- B) 1970s
- C) **Early 1980s**
- D) 1990s

136. What was the unofficial name of the first CHI conference in 1981?

- A) **Conference on Easier and More Productive Use of Computer Systems**
- B) Symposium on Human-Computer Interaction
- C) HCI Conference of 1981
- D) Usability Systems Conference

137. What was the watershed moment in HCI described by Marcus?

- A) The establishment of IBM's usability division
- B) The first CHI conference in Boston
- C) **The surpassing of I/O code over data manipulation code**
- D) The development of rapid prototyping tools

138. Which discipline does human factors engineering have deep connections with?

- A) Civil engineering
- B) Computer science
- C) Architecture
- D) **Industrial and systems engineering**

139. Who is considered the early pioneer of "scientific management"?
- A) **Frederick Winslow Taylor**
  - B) Douglas Engelbart
  - C) Ivan Sutherland
  - D) Alan Turing
140. What was the focus of early HCI work?
- A) User modeling
  - B) **Ergonomics of hardware devices**
  - C) Software architectures
  - D) Systems engineering
141. When did HCI begin to coalesce into a fledgling discipline?
- A) 1970s
  - B) **1983**
  - C) 1990s
  - D) 2007
142. What is the primary concern of human factors engineering in HCI?
- A) **Optimizing user performance**
  - B) Designing complex systems
  - C) Studying human behavior
  - D) Preventing system failures
143. Which psychological field heavily influenced human factors and HCI?
- A) Developmental psychology
  - B) **Cognitive psychology**
  - C) Social psychology
  - D) Behavioral psychology
144. Who developed the influential "Model Human Processor" in HCI?
- A) Donald Norman
  - B) **Card, Moran, and Newell**
  - C) Frederick Winslow Taylor
  - D) Ivan Sutherland
145. What is GOMS used for in HCI?

- A) **Predicting various measures of user performance**
  - B) Designing software architectures
  - C) Testing graphical interfaces
  - D) Analyzing hardware ergonomics
- 146.** Who proposed the task-artifact cycle in HCI?
- A) Brad Myers
  - B) Donald Norman
  - C) Card, Moran, and Newell
  - D) **Carroll and Rosson**
- 147.** What is the objective of formal methods in HCI?
- A) Designing graphical interfaces
  - B) Analyzing psychological behavior
  - C) **Ensuring correctness and consistency**
  - D) Conducting ethnographic studies
- 148.** Which theoretical perspective in HCI emphasizes work practice situated in a worker's own environment?
- A) Cognitive theory
  - B) Human factors theory
  - C) **Work activity theory**
  - D) Developmental psychology
- 149.** Who is considered a pioneer in computer graphics?
- A) Donald Norman
  - B) **Ivan Sutherland**
  - C) Dan Olsen
  - D) Mark Green
- 150.** What was a significant breakthrough in interaction styles mentioned in HCI?
- A) Command line interfaces
  - B) **Direct manipulation**
  - C) Text-based interactions
  - D) Mainframe computing

- 151.** What is the relationship between software engineering and HCI?
- A) Software engineering preceded HCI
  - B) HCI has no connection with software engineering
  - C) Both have complementary development life cycles**
  - D) Software engineering is a subset of HCI
- 152.** How did developers in the 1980s and 1990s support point-and-click interactions?
- A) By developing hardware devices
  - B) By standardizing interaction techniques**
  - C) By focusing on command line interfaces
  - D) By implementing UIMS
- 153.** What is the term used to describe the behavior of a user and an interaction object within a task?
- A) Task analysis
  - B) Interaction technique**
  - C) Ethnography
  - D) Command language grammar
- 154.** Who developed the concept of the task-artifact cycle in HCI?
- A) Brad Myers
  - B) Donald Norman
  - C) Card, Moran, and Newell
  - D) Carroll and Rosson**
- 155.** Which technique focuses on predicting user performance measures in HCI?
- A) GOMS**
  - B) Task analysis
  - C) Command language grammar
  - D) Task artifact cycle
- 156.** Which theory emphasizes human task performance from goals to actions and feedback?
- A) Theory of work activity
  - B) Model Human Processor

- C) Task analysis theory
- D) Theory of action**

- 157.** What is the role of formal methods in HCI?
- A) Designing graphical interfaces
  - B) Ensuring correctness and consistency**
  - C) Conducting ethnographic studies
  - D) Analyzing psychological behavior
- 158.** What term describes a way of using a physical input/output device to perform a generic task in HCI?
- A) Interaction technique**
  - B) Task analysis
  - C) Human work activity
  - D) Developmental psychology
- 159.** Who emphasized the development of libraries of widgets for graphical user interfaces?
- A) Dan Olsen
  - B) Ivan Sutherland
  - C) Donald Norman
  - D) Brad Myers**
- 160.** What aspect of direct manipulation interfaces differentiates them from command line interfaces?
- A) Use of text commands
  - B) Emphasis on keyboard shortcuts
  - C) Visual representation of objects**
  - D) Reliance on function keys
- 161.** What was a primary focus of early HCI work?
- A) Software architectures
  - B) Designing complex systems
  - C) Ergonomics of hardware devices**
  - D) Systems engineering

162. Who developed the GOMS model in HCI?  
A) Brad Myers  
B) Donald Norman  
**C) Card, Moran, and Newell**  
D) Carroll and Rosson
163. What aspect of human factors engineering is fundamental to HCI?  
**A) Studying human behavior**  
B) Designing complex systems  
C) Analyzing hardware ergonomics  
D) Preventing system failures
164. Who proposed the concept of affordances in HCI?  
**A) Donald Norman**  
B) Ivan Sutherland  
C) Dan Olsen  
D) Mark Green

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165. What is the main focus of this chapter? a) Contextual inquiry **b) Extracting interaction design requirements** c) Design guidelines d) Prototyping
166. What is the gap between analysis and design? **a) The cognitive shift between analysis-oriented thinking and design-oriented thinking** b) The difference in software used c) The time difference between the two phases d) The team difference between analysts and designers
167. What constitutes the first span of the bridge between analysis and design? a) Prototypes **b) Needs and requirements** c) Design guidelines d) Final designs

168. Which of the following is NOT a characteristic of requirements according to the text? a) Completeness b) Correctness c) Changing nature **d) Easy to implement**
169. What is the trend in software engineering regarding requirements specifications? a) Detailed formal requirements are preferred **b) There is a move away from detailed requirements specifications** c) Use cases are mandatory d) Pseudo-code is used extensively
170. For domain-complex systems, what kind of requirements specification is typically needed? **a) A rather complete specification of requirements** b) No specification is needed c) Only high-level requirements d) Pseudo-code based specifications
171. According to the text, what should be done with functional requirements revealed during requirements extraction? a) They should be ignored **b) They should be passed on to software engineering counterparts** c) They should be the sole focus d) No guidance is provided
172. How does the process of extracting requirements compare to contextual analysis? a) It is much easier b) It is much harder **c) It is similar in involving group interpretation of data** d) It has no relation to contextual analysis
173. What kind of reasoning process is requirements extraction? a) Inductive **b) Deductive** c) Abductive d) Analogical
174. Which of the following is NOT recommended as part of preparation for requirements extraction? a) Selecting a requirements team b) Choosing a requirements team leader **c) Selecting designers to be part of the team** d) Having a recorder experienced in writing requirements
175. How should terminology inconsistencies in contextual data be handled during requirements extraction? a) Ignore them **b) Act to standardize terminology** c) Leave them as-is d) Remove the inconsistent data



176. What is the recommended way to capture interaction requirements that imply functional requirements? a) Ignore the functional requirements b) Document them separately from interaction requirements **c) Combine them with interaction requirements** d) The text does not provide guidance
177. Which of the following is NOT an example of a kind of requirement mentioned in the text? a) Functional requirements b) Usability goals c) Emotional impact requirements **d) Implementation requirements**
178. What should be done if a work activity note implies a need that is technologically difficult to address? a) Ignore it **b) Record it for later consideration** c) Discard the contextual data d) Modify the need
179. What is the purpose of extrapolation requirements? **a) To generalize narrow contextual data** b) To add unrealistic requirements c) To confuse stakeholders d) No purpose is mentioned
180. In addition to requirement statements, what other output can result from requirements extraction? **a) Questions about missing data** b) Design specifications c) Prototypes d) Both a and b
181. What should be done if a work activity note leads to identifying a system support need? a) Ignore it **b) Document it to pass to systems engineering** c) Modify the activity d) Remove the activity from contextual data
182. True or False: Marketing inputs can arise from requirements extraction.  
**a) True** b) False
183. Which of the following is NOT mentioned as a constraint to consider for requirements? a) Development cost b) Software architecture **c) User goals** d) Implementation platforms
184. How should requirements be prioritized according to the text? a) No prioritization is needed b) Prioritize based on team judgement **c) Ask customers/users to prioritize** d) Use a predetermined scoring system

185. What is the importance of taking requirements back to customers/users for validation? a) To solidify the relationship as partners b) To identify any misconceptions before design **c) Both a and b** d) No reason is provided
186. During requirements validation, what kind of issues can be uncovered according to the text? a) Organizational issues b) Sociological issues c) Personal issues  
d) **All of the above**
187. Which of the following is NOT an abridged method mentioned for requirements extraction? a) Use the WAAD directly as requirements representation b) Anticipate needs/requirements during contextual analysis c) Use work activity notes directly as requirements d) **Build complete prototypes first**
188. What mental step is required when using the WAAD as a requirements representation? **a) Interpret work activity notes as requirements** b) No mental step is needed c) Discard irrelevant notes d) Reorganize the WAAD
189. When anticipating needs/requirements during contextual analysis, what should be done according to the text? **a) Restate raw data in a requirements-oriented way**  
b) No anticipation is needed c) Build complete prototypes d) Prioritize requirements
190. What is a key drawback of affinity diagrams that is highlighted? a) They take too much time to create **b) They do not contain priority information** c) They are difficult to interpret  
d) They are ineffective techniques
191. When using work activity notes directly as requirements, what must still be done according to the text? a) Build a WAAD **b) Deduce requirements on the fly** c) No extra step is needed  
d) Prioritize the notes
192. In the Ticket Kiosk System example, which requirement is related to "security and privacy of transactions"? a) Users shall have a shopping cart b)

Users shall be able to view the shopping cart  
**c) Users shall be protected from identity theft/fraud** d) Users shall see seating availability

**193.** Which example requirement is an extrapolation according to the text? **a) Users shall have a timeout feature** b) Users shall receive transaction reminders c) Users shall confirm purchases before paying d) Users shall receive printed tickets, not just confirmation

**194.** In the MUTTS example constraints, what is mentioned as a hardware constraint? a) Need for special kiosk hardware **b) Keeping the credit card server operational** c) Network communications efficiency d) Insufficient office space

**195.** Which of these is listed as a potential Ticket Kiosk System constraint? a) Leased office space **b) Touchscreen interaction only** c) Air conditioning issues d) General purpose technician limitations

**196.** According to the text, what should be done if a requirement cannot realistically be met in the current version? a) Discard the requirement completely **b) Set it aside for future consideration** c) Modify the requirement scope d) Build the requirement but de-prioritize it

**197.** What is the term used in the chapter for attaching identifiers to link requirements to original data sources? a) Traceability matrix **b) WAAD source node ID** c) Validation reference d) Requirements map

**198.** In the generic requirement statement structure, what is the purpose of the "Rationale" component? a) To explain design decisions **b) To justify the requirement source** c) To detail functionality d) No purpose is specified

**199.** Which of these is NOT listed as a potential output from requirements extraction? a) Marketing inputs b) System support needs **c) Design specifications** d) Questions about missing data

200. According to the text, when should design ideas to address requirements be documented? a) After the entire process **b) Immediately, while they occur to you** c) Only if approved by stakeholders d) No guidance is provided
201. Which part of the requirements extraction process provides an opportunity for UX and software teams to coordinate? **a) Identifying functional requirements** b) Documenting constraints c) Prioritizing requirements d) All of the above
202. What is the role of new users during requirements validation according to the text? a) To confirm existing interpretations are correct b) To provide new insights into needs **c) Both a and b** d) Their role is not specified
203. What kind of issues relating to territoriality, fear and control can arise during requirements validation? a) Organizational issues b) Personal issues **c) Both a and b** d) No such issues are mentioned
204. Which of these is NOT a characteristic of quality usage experience mentioned for consideration in requirements? a) Emotional impact b) Phenomenological aspects c) Usability **d) Functionality**
205. According to the text, how can emotional impact requirements be identified during extraction? **a) Look for notes mentioning "fun" or "enjoyment"** b) They cannot be identified, only functional requirements c) Ask users to explicitly list emotional impact requirements d) Use predetermined heuristics to identify them
206. Which of these terms is used to refer to examining the philosophical underpinnings of user experience? a) Emotional impact **b) Phenomenological aspects** c) User satisfaction d) None of the above
207. When should extrapolation requirements be validated according to the text? a) They don't need validation b) After final design is completed **c) During requirements validation with users** d) No guidance is provided

208. What is the purpose of a "Notes" section in a requirement statement? a) To document passing comments from users b) To detail technical implementation details **c) To record relevant discussion points** d) To justify the requirement rationale
209. Which team member is responsible for keeping requirements extraction on track? **a) Requirements team leader** b) Facilitator c) Recorder d) Project manager
210. What technique does the text suggest using for distinguishing important and unimportant requirements? **a) Ask users to prioritize them into sections** b) Use a scoring system determined by the team c) Use predetermined weightings based on personas d) No technique is suggested
211. True or False: Requirements extraction happens only once, before design starts. a) True **b) False**
212. Which of these is NOT a role recommended for the requirements extraction team? a) UX people b) Software people **c) Designers** d) System architects
213. What is a suggested way to provide traceability back to original contextual data sources? a) Take photos of the WAAD b) Record videos of interpretation sessions **c) Use WAAD node IDs in requirements** d) No traceability guidance is given
214. According to the text, what should be the focus when reviewing and finalizing requirements? a) Ensuring all stated requirements will be met b) Not every requirement needs to be met c) Removing unrealistic requirements **d) Both b and c**