الجامعة السعودية الالكترونية
Saudi Electronic University

Final Examination Cover Sheet
First Semester: 1436-1437 / 2015-2016

Course Instructor:		**Exam Date:**	29/12/2015
Course Title:	**Human Computer Interaction**	**Course Code:**	IT-201
Exam Duration:	**2 Hours**	**Number of Pages:** (including cover page)	**12**

Exam Guidelines

- **Mobile phones are not permitted.**
- **Calculators are not permitted.**

Marking Scheme

Questions	Score
Q1	/40
Q2	/20
Q3	/6
Q4	/8
Q5	/6
Q6	/8
Q7	/6
Q8	/6
Total	/100
Final Score	/50

Student Name: _____   **Student ID:** _____

Question 1: Multiple Choice Questions

Circle the correct choice. There are a total of 40 MCQs. [40]

1. Which of the following is NOT true about command language?
   a. Appeals to novice users
   b. Supports user initiative
   c. Requires substantial training and memorization
   d. Allows convenient creation of user-defined macros

2. Which interaction style visually presents task concepts?
   a. Natural language
   b. Command Language
   c. Direct Manipulation
   d. Form Fill-In

3. Describing situations that portray typical needs of potential users is called _____.
   a. Scenario development
   b. Participatory design
   c. Social impact statement
   d. Model consolidation

4. Metaphors of human thinking (MOT) is a type of expert review where _____.
   a. The experts simulate users walking through the interface to carry out typical tasks.
   b. The experts analyze an interface to determine conformance with a short list of design standards
   c. The experts verify consistency across a family of interfaces, checking the terminology, fonts, color schemes, layout, input and output formats, etc.
   d. The experts conduct an inspection that focuses on how users think when interacting with an interface.

5. Which of the following is/are considered as a problem with direct manipulation?
   a. Users must learn the graphical representations.
   b. Designs may force valuable information off of the screen.
   c. High-level flowcharts and database-schema can become confusing
   d. All above

6. All of the following are good guidelines for use of icons *except* _____.
   a. Represent the object or action in a familiar and recognizable manner.
   b. Carefully consider three-dimensional icons; they are eye-catching but also can be distracting.
   c. Limit the number of different icons.
   d. Make the icon blend in with its background

7. Heuristic Review is a type of expert review where _____.
   a. The experts simulate users walking through the interface to carry out typical tasks.
   b. The experts analyze an interface to determine conformance with a short list of design standards
   c. The experts verify consistency across a family of interfaces, checking the terminology, fonts, color schemes, layout, input and output formats, etc.
   d. The experts conduct an inspection that focuses on how users think when interacting with an interface

8. Universal Usability Testing involves _____.
   a. A quick approach to task analysis, prototype development and testing with as few as three to six test participants
   b. Testing interfaces with highly diverse users, hardware, software platforms, and networks
   c. New interfaces to work in realistic environments or in a more naturalistic environment in the field for a fixed trial period
   d. A type of testing in which the users try to find fatal flaws in the system or otherwise destroy it

9. Which statement is NOT true about short-term, and working memory?
   a. People have limited capacities for absorbing information.
   b. People store short "chunks" of information in short-term memory.
   c. People use short-term memory in conjunction with working memory for processing information and for problem solving.
   d. Long-term memory processes perceptual input, whereas working memory is used to generate and implement solutions.

10. Studying a full set of printed screens laid out on the floor or pinned to walls is called getting _____.
    a. A bird's eye view
    b. A cognitive view
    c. A heuristic overview
    d. A validation overview

11. Complicating factors in the architecture of remote environments is/are:
    a. Time delays
    b. Incomplete feedback
    c. Unanticipated interferences
    d. All of the above

12. Allowing users to personalize the menu contents is a good strategy for_____
    a. Facilitating data entry for complex tasks
    b. Accommodating the needs of multiple user classes
    c. Getting the users' attention
    d. Preventing user errors

13. The number of seconds it takes from the moment users initiate an activity until the computer presents results on the display called:
    a. Response time
    b. User think time
    c. User planning time
    d. None of the above

14. The size of a chunk of information a person can hold in short-term memory depends on _____.
    a. Familiarity with the material (knowledge and experience).
    b. Long-term memory
    c. Natural cognitive abilities
    d. Age and gender

15. For repetitive tasks, users prefer and work more rapidly with _____.
    a. Variable response times
    b. Longer response times
    c. Shorter response times
    d. Linear productivity

16. The basic goals of language design are:
    a. Precision, Compactness, Ease in writing and reading, Completeness, Speed in learning, Simplicity to reduce errors, Ease of retention over time
    b. Creativity, Complexity, Speed in Learning, Ease in reading and writing, Adaptability
    c. Standardization, Ease of retention over time, Quality, Plasticity, and Transparency
    d. Adaptability, Simplicity to reduce errors, Complexity, Ease of reading and writing

17. Electronic documents or diaries that are owned by their creators and usually allow readers to give their comments are called _____.
    a. Blogs
    b. Wikis
    c. User Groups
    d. Listservs

18. Network communities can be controversial because of _____
    a. Hackers
    b. Hate groups
    c. Para military groups
    d. All of the above

19. Face-to-Face interfaces allow:
    a. File sharing
    b. Workspace sharing
    c. Group activities
    d. All of the above

20. Designers of response times and display rates in HCI must consider:
    a. Cost
    b. Task complexity
    c. Error rate
    d. All the above

21. Guidelines for error message include all of the following *except*:
    a. Be as specific and precise as possible.
    b. Choose user-centered phrasing.
    c. Maintain consistent visual format and placement
    d. Use shortcuts

22. Collaborations between two or three people who need each other to complete a task are called _____.
    a. Focused partnerships
    b. Meeting and decision support
    c. Teledemocracy
    d. Structured work processes

23. The magnification from the overview to the detail view is called the _____.
    a. Scale factor
    b. Map scale
    c. Detail scale
    d. Zoom factor

24. Synchronized scrolling is a type of coordination where _____.
   a. The scroll bar of one window is coupled to another scroll bar, and action on one scroll bar causes the other window's contents to scroll in parallel.
   b. Coordinated windows can be used to support hierarchical browsing.
   c. Browser tabs allow you to view multiple web pages in the same browser without the need to open a new browser session.
   d. Scroll bars can automatically be turned on and off to conserve screen space.

25. Collaborative web pages that are open for users to add or revise content are called _____?
   a. Blogs
   b. Digests
   c. Wikis
   d. ListServs

26. Which of the following is NOT a top-ten mistake of web page presentation of information?
   a. Burying information too deep in a web site.
   b. Overloading pages with too much material.
   c. Providing awkward or confusing navigation.
   d. Putting information in expected places on the page.

27. The process that scans for flaws in an entire circuit diagram, medical image, or newspaper layout is called:
   a. Monitoring
   b. Diagnostics
   c. Navigation
   d. Image generation

28. Which of the following statement is NOT true about user response time?
   a. Users generally prefer shorter response times.
   b. Longer response times (> 15 seconds) are disruptive.
   c. Shorter response time leads to longer user think time.
   d. A faster pace may increase productivity, but it may also increase error rates.

29. Which of the following is NOT a keyboard layout:
   a. ABCDE
   b. QWERTY
   c. Dvorak
   d. ZYXWV

30. Command languages are distinguished from menu-selection systems in that
_____.
    a. Users must recall notation and initiate actions.
    b. Users view or hear the limited set of menu items and respond.
    c. Command languages are better suited for novice users.
    d. Command-language systems offer the user detailed prompts

31. Successful virtual environments depend on smooth integration of which of the following technologies?
    a. Visual display
    b. Head-position and hand position sensing
    c. Force feedback and haptics
    d. All of the above

32. Acyclic and cyclic menu networks can cause:
    a. Linear Sequence
    b. Confusion
    c. Disorientation
    d. B & C

33. Which of the following is/are advantages of using two-dimensional menus?
    a. Increase the number of required actions
    b. Good overview of the choices
    c. Rapid selection
    d. B & C

34. Ways a designer can reduce user frustration include all of the following *except*:
    a. Increase server capacity, network speed, and network reliability.
    b. Improve user training, online help, and online tutorials.
    c. Redesign instructions and error messages.
    d. Design for expert users first, not for universal usability.

35. A scrolling menu with a text-entry field is an example of:
    a. Pop-up Menu
    b. Pull-down Menu
    c. Combo box Menu
    d. A & B

36. Regarding Dialog Boxes, internal layout guidelines include:
    a. Top-left to bottom-right sequencing
    b. Smooth appearance and disappearance
    c. Display close to appropriate items
    d. B & C

37. A speech generator is useful for users in all the following situations *except*:
    a. When the environment is too brightly lit, too poorly lit
    b. They have a long list of data entry items
    c. Their visual channels are overloaded
    d. They must be free to move around

38. If the designer cannot create appropriate direct manipulation strategies then which of the following is/are attractive alternative(s)?
    a. Content Organization
    b. Form Fill-in
    c. Menu Selection
    d. B & C

39. Which of the following does NOT improve recognition rates for discrete-word–recognition devices?
    a. Careful choice of vocabularies
    b. Head-mounted microphones
    c. Quiet environments
    d. Less training

40. Touchscreen and trackball devices are a good choice for _____.
    a. Situations when there are a small number of targets
    b. Public access, shop floor, and laboratory applications
    c. Drawing and handwriting
    d. Games

Question 2: True/False Questions

Write T for True and F for False against every question.   [20]

1. One advantage of WYSIWYG word processors is users see a partial page of text.   **(F)**

2. Augmented reality enables users to see the real world with an overlay of additional interaction.   **(T)**

3. Designers should identify error conditions and prepare error messages.   **(T)**

4. The need for experienced users to sense that they are in charge of the interface and that the interface responds to their actions is called External Loss of control.   **(F)**

5. One way to encourage user exploration of an interface's features is to permit easy reversal of actions.   **(T)**

6.   Audiolization and sound feedback maybe used to confirm user actions.   **(T)**

7. Designers should determine functionality of the system by studying users' task domain.   **(T)**

8. You can only send text via email.   **(F)**

9. Side-by-side placement of overview allows users to see the big picture and the details at the same time.   **(T)**

10. Users will change their work habits as the response time changes.   **(T)**

11. Using black and white in graphic displays helps in greater information density.   **(F)**

12. Function keys can reduce number of keystrokes and errors.   **(T)**

13. Designers should create a list of task actions and objects.   **(T)**

14. Consistent color-coding may mislead users. **(F)**

15. As the menu depth increases, time and number of errors decrease. **(F)**

16. Tele-democracy allows small organizations, professional groups, and city, state, or national governments to conduct online town-hall meetings, to expose officials to comments from constituents **(T)**

17. Radio button is a multiple selection menu. **(F)**

18. One of the elements in form fill-in design is to provide Convenient Cursor Movement facility to the users so that they can move cursor between fields using a mouse. **(F)**

19. With little penalty for an error, users prefer to work more quickly. **(T)**

20. A unifying interface concept or metaphor aids learning. **(T)**

Short Essay Questions

Elaborate in your own words and give appropriate explanation, model and example if necessary.

Q3: Describe any three guidelines for creating usable abbreviations for a command set?   [6]

Answer: (Any three)

1. A *simple* primary rule should be used to generate abbreviations for most items; a *simple* secondary rule should be used for those items where there is a conflict.

2. Abbreviations generated by the secondary rule should have a marker (for example, an asterisk) incorporated in them.

3. The number of words abbreviated by the secondary rule should be kept to a minimum.

4. Users should be familiar with the rules used to generate abbreviations.

5. Truncation should be used because it is an easy rule for users to comprehend and remember. However, when it produces a large number of identical abbreviations for different words, adjustments must be found.

6. Fixed-length abbreviations should be used in preference to variable-length ones.

7. Abbreviations should not be designed to incorporate endings (ING, ED, S).

8. Unless there is a critical space problem, abbreviations should not be used in messages generated by the computer and read by the user.

Q4: List any four issues people may face while using audio and video conferencing?   [8]

Answer: (Any five)

1. slow response times for entering and leaving session
2. distracting background audio
3. difficulty in determining who is speaking
4. inadequate lighting
5. difficulty in making eye contact
6. changed social status
7. small image size
8. potential invasion of privacy
9. need for convenient turn taking
10. need for document sharing

Q5: What are three primary factors, which influence users' expectations and attitudes regarding response time? [6]

Previous experiences, Individual personality differences, and Task differences

Q6: Explain the difference between direct-control and indirect-control pointing devices and provide three examples of each type. [8]

Direct control devices. Easy to learn and use, but hand may obscure display.
   a. Lightpen
   b. Touchscreen
   c. Stylus
Indirect control devices. Take time to learn.
   a. Mouse
   b. Trackball
   c. Joystick
   d. TrackPoint
   e. Touchpad
   f. Graphics tablet

Q7: Briefly explain in your own words how role-centered design might improve a user's efficiency. [6]

Users get information and interface choices tailored the tasks they need to perform for a specific role. This could improve performance and reduce distraction while the user is working in a given role and could facilitate shifting of attention from one role to another.

The personal role manager could simplify and accelerate the performance of common coordination tasks, in the same way that graphical user interfaces simplify file-management tasks.

Q8: List any three human-factors variables that help with choosing the pointing device suitable for your interface. [6]

Answer: (Any three)
   • speed of motion for short and long distances
   • accuracy of positioning
   • error rates
   • learning time
   • user satisfaction