Your Name:

_____

CMSC 434 – Spring 2009

Prof. Bederson

Final Exam – May 20th, 2009

100 Points

Multiple Choice (20 points, 2 points per question)
Circle a single answer per question

1. In a think-aloud evaluation, software users are asked to talk out loud while using an interface so that the experimenter can be efficient in recording their observations.
   A. TRUE
   B. FALSE

2. In a controlled empirical evaluation, the independent variables are those factors that you hold constant while you measure the dependent variables.
   A. TRUE
   B. FALSE

3. Natural language (spoken language) interfaces are always better than direct manipulation interfaces.
   A. TRUE
   B. FALSE

4. Users are all alike
   1. TRUE
   2. FALSE

5. After task analysis has been completed, the designer must choose an interaction style for the interface. Which of the following is the interaction style when a designer creates a visual representation of the data and interaction?
   A. Command language
   B. Natural language
   C. Menu selection
   D. Direct manipulation
   E. Form fill-in

6. Suppose you are developing a new word processor that boasts more features than any of its competition. What would be the best way for intermittent users to remember all of the commands?
   A. Provide detailed on-line help documentation, so the user can look up commands
   B. Provide visual cues, icons, menus, and dialog boxes
   C. Allow user to specify commands in their natural language

7. Hicks Law is:
   A. The time needed to make a movement
   B. The time needed to click on a button
   C. The time needed to make a decision
   D. The time needed to remember something

8. According to Jen Golbeck (the guest speaker in class), which person would you be more likely to trust in giving movie recommendations.
   A. Some that has completely different ratings on your favorite and most hated movies, but exactly matched on all movies inbetween.
   B. Someone that matched your favorite movie and most hated movies, but had completely different ratings on everything else.

9. A Likert scale is:
   A. A rating scale with an even number of options
   B. A rating scale with an odd number of options
   C. A measurement of performance
   D. A measurement of accuracy

10. Why is Doug Engelbart important in the history of HCI?
    A. He invented direct manipulation
    B. He invented the mouse
    C. He invented interactive graphical displays
    D. He invented the hyperlink

Fill in the blank (50 points, 2 points per blank)

11. When designing a door, you should consider the _____ design principal to determine the form of the part of the door that you interact with to open or close it.

12. If the door opens inward and you are on the outside, a device shaped as a _____ would be a good form for the part of the door that you interact with.

13. The primary difference between Information Visualization and Scientific Visualization is that information visualization considers _____ data while scientific visualization considers _____ data.

14. You are designing an on-line shopping system. To aid users with initial understanding of your system, you use the familiar notion of a shopping cart. The use of the shopping cart is an example of a _____ .

15. Grafitti, Quikwriting and XNav are examples of _____ recognizers.

16. A controlled experiment in which each subject is exposed to only one experimental condition is referred to as a _____ design.

17. A _____ test can be used to detect a significant trend between two different subject populations.

18. Three key challenges specific to designing interfaces for mobile devices are:
    A:_____
    B:_____
    C:_____

19. The four things that are needed before you can perform a cognitive walk through are:
    A:_____
    B:_____
    C: _____
    D: _____

20. Name three of the nine heuristics presented by Nielsen for his heuristic evaluation:
    A:_____
    B:_____
    C:_____

21. List the three processor types associated with the human information processor model:
    A:_____
    B:_____
    C: _____

22. You have to evaluate a UI, and are considering the following methods:
    (H) Heuristic evaluation by expert UI designers
    (C) Cognitive walkthrough
    (G) GOMS analysis
    (K) Keystroke-level model analysis
    (U) Usability evaluation / video recording with users performing a set of tasks
    (T) Thinking out loud evaluation with users performing a set of tasks

    Answer each of the following by placing one or more of the letters H, C, G, K, U or T in the space provided.

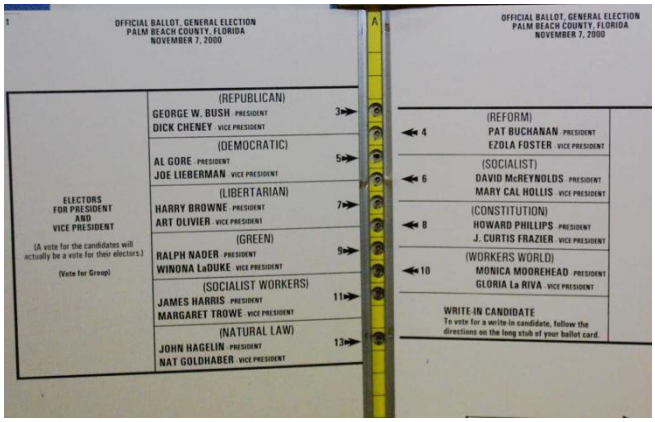
    a. Which one(s) require more than just the designer to perform? _____
    b. Which one(s) can address problems in learning the UI? _____
    c. Which one(s) can address speed of use? _____
    d. On which one(s) would you rely for subjective "this is neat" evaluations/reactions? _____

Short answer (30 points, 6 points per question)

23. What are the four levels of social participation described in the article by Preece & Shneiderman? Briefly (one sentence or less) describe each level and its role in the spread of social participation.

24. List three ways to structure a successful brainstorm, and what the core reason is for each practice (in one sentence or less per reason).

25. Why was the butterfly ballot a poor voting interface? Suggest an improvement that could be made to improve the interface.



26. You saw a number of “futuristic” videos in class. From those videos, describe in one sentence a feature that would still be very difficult to implement with today’s hardware and software technology, and one feature that could be readily implemented today.

    Still difficult:

    Not difficult:

27. In Microsoft Windows, a scroll bar has an up arrow button at the top, and a down arrow button at the bottom (left image). In Apple OS X, the scroll bar usually has both up and down arrow buttons placed at the bottom of the scroll bar (right image). Describe how the Apple scroll bar is advantageous and how it is disadvantageous in comparison to the Microsoft scroll bar.