

Name:

Group: 2A 2B 2C 2D 2E 2F 2G RET FLIP

Duration: 60 minutes

Instructions: This exam has two parts: questions 1 to 30 are choice questions, and are worth 75% of the grade of the exam. They must be answered in the attached template. Each incorrect answer subtracts 1/3 of the value of a correct answer. Questions 31 (1.25 points) and 32 (1.25 points) are open questions and must be answered in this document.

1. Which interaction style uses the ticket vending machines of Metro Valencia?

- a. Direct manipulation
- b. Form fill-in
- c. Buttons
- d. Menu selection



2. The attributes of primary task objects...

- a. can always be obtained from the concrete use cases
- b. represent a piece of information owned exclusively by the object
- c. can only be numeric or textual
- d. can be references to other objects

3. Imagine that, during analysis, we have made an error in an attribute of a task object. How that error can impact later on the physical design?

- a. We will have to modify buttons or menus in some screens that represent containers
- b. We will have to modify/remove/add fields in the screens that represent containers
- c. There will be no impact
- d. We will have to modify the main container

4. The most suitable type of prototype for showing the typical environment in which the application will be used is:
- Mockup
 - Wireframe
 - Storyboard
 - High fidelity prototype
5. Which is the order in which prototypes should be used during the design process:
- Content diagram, story board, wireframe, mockup
 - Story board, content diagram, mockup, wireframe
 - Story board, content diagram, wireframe, mockup
 - Story board, wireframe, content diagram, mockup
6. Which of the following techniques follows the Nielsen's principle of design of "Recognition rather than recall"?
- Wizards (for example, wizards for installation of applications)
 - Hierarchical menus
 - Tooltips
 - Toolbars
7. Which of the following guidelines is advisable for text boxes?
- They are not adequate to input formatted information
 - The text box's size should indicate the expected amount of information
 - If possible, block the user from entering non acceptable characters instead of performing a validation afterwards
 - All options are advisable for text boxes
8. The guidelines "Disable the buttons or options that are not available" is related with the following design principle:
- Visibility
 - Simplicity
 - Tolerance
 - Structure
9. Sort the following elements from more abstract to less abstract:
- Design rules, guidelines, principles of design
 - Style guides, design rules, principles of design
 - Principles of design, design rules, style guides
 - Principles of design, style guides, design rules
10. Which of the following is NOT a type of expert evaluation?
- Remote usability tests
 - Heuristic evaluation
 - Review of design guidelines
 - Consistency inspection

- 11. A formula 1 team has prepared the final design for the engine of their car. After building the engine, it is installed in a test bench and the engineers study parameters such as maximum number of revolutions, consumption, temperature at optimum throughput, etc. What type of evaluation have they applied?**
- a. Diagnostic and summative
 - b. Diagnostic and formative
 - c. Measurement and summative
 - d. Measurement and formative
- 12. Which type of usability test is best suited to study a large number of participants?**
- a. Interviews
 - b. Usability laboratory
 - c. Remote usability tests
 - d. All answers are adequate
- 13. In the template for containers, the square icon ■ represents:**
- a. Single links
 - b. Double links
 - c. The starting point of the process
 - d. The functions invoked by the system
- 14. What types of links can be defined between the containers of a content diagram?**
- a. Cyclic and acyclic
 - b. Acyclic and bidirectional
 - c. Single and double links
 - d. None of the options are correct
- 15. Which of the following sentences regarding content diagrams is false:**
- a. A container is an abstract representation of part of users' work and the functions that supports it
 - b. Links represent the user's navigation between different functional areas of the application
 - c. They are an abstract representation of the UI's screens and the connections between them
 - d. It is created from the information obtained during the requirements definition and from the concrete use cases
- 16. The evaluator should not:**
- a. Be sensitive in her recommendations
 - b. Develop the solutions, correcting the designers
 - c. Review the consistency in all the screens of the application
 - d. Be comprehensive in her report
- 17. Which of the following elements are used to control the interaction in a user interface?**
- a. Main window, secondary windows and tabs
 - b. Menus and toolbars
 - c. Radio buttons and text boxes
 - d. Object-attribute-action tables

18. Which of the following is not an interaction style?

- a. Direct manipulation
- b. Form fill-in
- c. Remote control
- d. Command line interfaces

19. In which type of menu the distance travelled by the user with the mouse does not depend on the number of options?

- a. Fisheye menus
- b. Pull-down menus
- c. Pie menus
- d. Pop-up menus

20. Which of the Nielsen's principles of design fulfills the following interface:



- a. Visibility of system status
- b. Match between system and the real world
- c. Aesthetic and minimalist design
- d. It fulfills all the principles in this list

21. Which of the following sentences regarding menus is false?

- a. Menus avoid many of the problems of command line interfaces
- b. Menus are suitable, among others, for users with little training
- c. Command line interfaces cannot implement menus
- d. Experts can feel restricted or slowed down

22. An interaction style:

- a. provides a look and feel for the UI components
- b. always shows help about what the next action could be
- c. is more efficient if it uses direct manipulation
- d. cannot be combined with other styles in an application

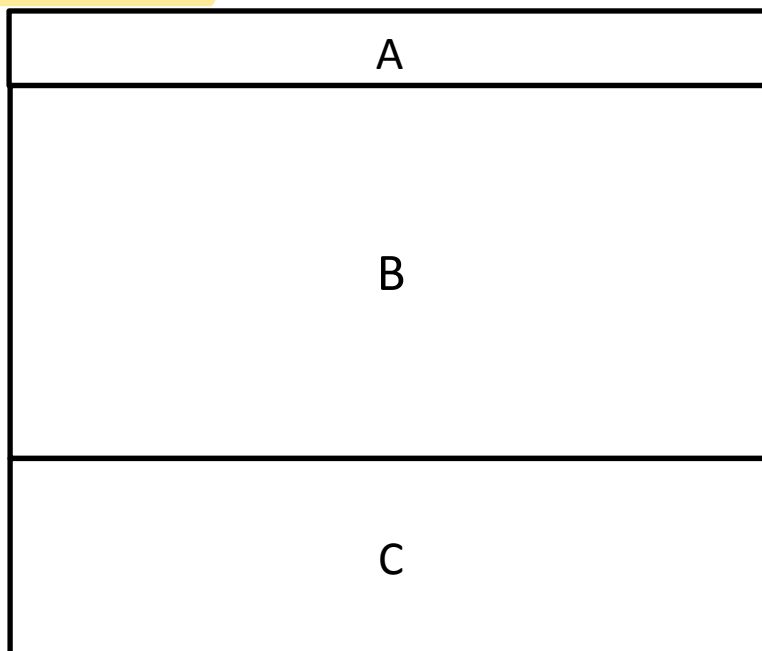
23. Which of the following is NOT a feature of prototypes?

- a. They allow the designers to generate multiple options for evaluating different designs
- b. They are usually incomplete and are discarded after they are used
- c. They are used to focus on the implementation and not in the design
- d. There are different types that provide different levels of fidelity

24. Video prototypes:

- a. allow the designers to show the user's environment and the interaction with the application
- b. only use high fidelity prototypes
- c. have the drawback that they need expensive recording equipment
- d. have the advantage that they almost need no preparation to create them

25. The following figure shows the layout of the screens presented in the talk given by Stadler. The screen was divided into three areas, and each area had elements of a specific type. Which type of element goes into each area?



- a. A) Actuators, B) Failure indicator and C) Status indicators
- b. A) Failure indicator, B) Actuators and C) Status indicators
- c. A) Failure indicator, B) Status indicators and C) Actuators
- d. A) Actuators, B) Status indicators and C) Failure indicator

26. Which of following sentences is false?

- a. Low fidelity prototypes can be used during the requirement analysis stage
- b. A wireframe prototype shows the organization of the screens, but not the color or typography
- c. The digital mockups are high fidelity prototypes
- d. Video prototypes are high fidelity prototypes used in the final stage of the project

27. The Wizard of Oz used for prototyping interfaces:

- a. requires writing a lot of code
- b. is a well-known software package for prototyping
- c. The Wizard of Oz has nothing to do with prototyping
- d. uses a human operator for simulating the system's behavior

28. Which of the following sentences is true?

- a. Field tests are done after the acceptance tests
- b. Usability tests are done after the field tests
- c. Expert evaluation is done after the usability tests
- d. Acceptance test are done before the expert evaluation

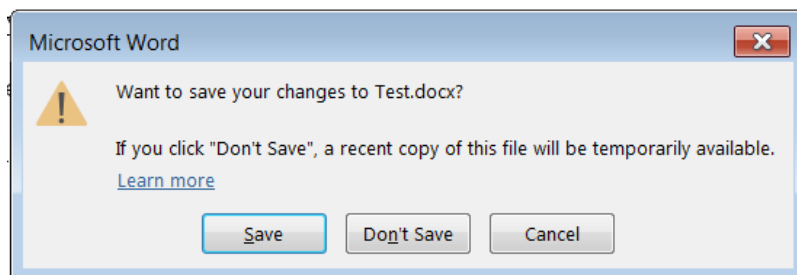
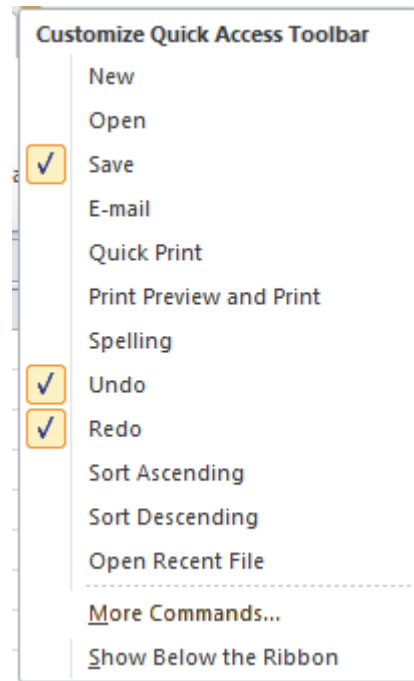
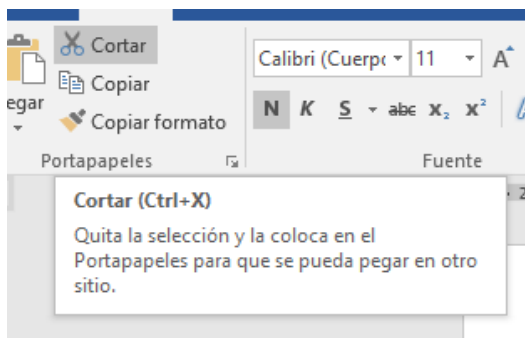
29. The Likert scale:

- a. has always five options
- b. has always an even number of options
- c. has always an odd number of options
- d. can be asymmetric

30. What is a content diagram?

- a. A use scenario represented graphically
- b. A representation of the screens of the interface and their connections
- c. A low fidelity prototype that represents the organization and structure of the interface
- d. A graphical representation of the data structures of the application and their connections

31. Given the following images, write (on the images themselves) where each of the following Nielsen principles have been applied:



1. Flexibility and efficiency of use
2. User control and freedom
3. Error prevention
4. Match between system and the real world
5. Aesthetic and minimalist design

32. The following diagram shows the configuration of a factory that has four tanks with chemical products (A, B, C and D). At the outlet of each tank there is a valve that regulates the amount of product that exits from the tank. The valves in tanks A and B are adjustable (they can be opened from 0% to 100%), while valves C and D can only be opened or closed. Furthermore, the products in tanks C and D cannot be mixed at any time, since their combination can explode, but there will always be one of them opened. At the general outlet there is a sensor that computes the amount of product made, in liters per second. Design a prototype of the user interface with the controls studied in this course for controlling the factory, paying special attention to the following design principles: Visibility of system status, Match between system and the real world, Consistency and Error prevention.

