



UNIVERSITY OF COLOMBO, SRI LANKA

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY ( EXTERNAL)  
*Academic Year 2020 – 2<sup>nd</sup> Year Examination – Semester 3*

***IT3405 – User Interface Design***  
***Part 1 - Multiple Choice Question Paper***

***(ONE HOUR)***

**Important Instructions :**

- The duration of the paper is **1 (one) hour**.
- The medium of instruction and questions are in English.
- The paper has **25 questions** and **6 pages**.
- All questions are of the **MCQ** (Multiple Choice Question) type.
- All questions should be answered.
- Each question will have 5 (five) choices with **one or more** correct answers.
- All questions will carry **equal** marks.
- There will be a penalty for incorrect responses to discourage guessing.
- The mark given for a question will vary from 0 (*All the incorrect choices are marked & no correct choices are marked*) to +1 (*All the correct choices are marked & no incorrect choices are marked*).
- Answers should be marked on the special answer sheet provided.
- Note that questions appear on both sides of the paper.  
If a page is not printed, please inform the supervisor immediately.
- Mark the correct choices on the given answer sheet which will be machine marked.  
**Please completely read and follow the instructions given on the other side of the answer sheet before you shade your correct choices.**
- Calculators are **not** allowed.
- *All Rights Reserved.*

1) What is the most suitable term among the given choices to complete the following sentence?

\_\_\_\_\_ can be used to estimate the time taken to complete simple data input tasks using a computer and mouse.

- (a) Fitt's Law
- (b) GOMS models
- (c) KLM methods
- (d) 2 Gulfs in Interaction
- (e) SPARK

2) Which of the following belongs to the 5E's of Usability?

- |                |                    |               |
|----------------|--------------------|---------------|
| (a) Effective  | (b) Engaging       | (c) Efficient |
| (d) Ergonomics | (e) Error tolerant |               |

3) Providing accelerators (e.g. keyboard shortcuts) mostly addresses

- |                  |                 |                |
|------------------|-----------------|----------------|
| (a) Utility      | (b) Safety      | (c) Efficiency |
| (d) Learnability | (e) Likeability |                |

4) What is the suitable term that describes the comparison of what happened in the world with what we wanted to happen?

- |                |               |               |
|----------------|---------------|---------------|
| (a) Action     | (b) Execution | (c) Selection |
| (d) Evaluation | (e) Goal      |               |

5) Which of the following can be used to link users and design in the early stages of the design life cycle?

- |                           |                         |                  |
|---------------------------|-------------------------|------------------|
| (a) Background Interviews | (b) On-site observation | (c) Unit testing |
| (d) Focus groups          | (e) Usability testing   |                  |

6) Which of the following is/are (an) advantage(s) of Form-based query interfaces?

- (a) Usually provide unsophisticated user access to a database
- (b) Can use one form sample for every purpose
- (c) Requires knowledge of how the data is structured in the database
- (d) No technical training is required
- (e) Can express only a very limited set of queries

7) Based on Norman's Seven stages of interaction, which of the following is/are (an) element(s) of the execution loop?

- |                                    |                                   |
|------------------------------------|-----------------------------------|
| (a) Formulates intention           | (b) The user establishes the goal |
| (c) Perceives system state         | (d) Interprets system state       |
| (e) Specifies actions at interface |                                   |

8) Which of the following is/are true with respect to accessibility?

- (a) Concerns with removing the barriers that would exclude some people from using the system
- (b) A system must be usable before it is accessible
- (c) Refers to fitness for purpose in the context of use
- (d) Is an important legal and ethical requirement
- (e) Designers need to focus on the demands their designs make on people's abilities

9) Which of the following is/are true regarding Long-term memory (LTM)?

- (a) LTM is capable of storing information for shorter periods.
- (b) LTM is capable of storing information for longer periods.
- (c) LTM has a huge or unlimited capacity.
- (d) LTM is more vulnerable to interference effects.
- (e) LTM can also be thought of as the working memory.

10) A persona in the context of User-Centered Design (UCD)

- (a) provides a basic idea of how the user will use the system and what he/she expects from the system.
- (b) is a real person.
- (c) represents a particular type of user.
- (d) should represent an average user.
- (e) is a written representation of an intended user of the system.

11) Which of the following is/are true with respect to ergonomics in Human-Computer Interaction?

- (a) It is a result of design errors due to wrong identification of requirements
- (b) It improves workplace processes and procedures
- (c) It improves employee's health
- (d) It prevents injuries in the workplace
- (e) It increases worker's compensation premiums

12) Which of the following is/are true with respect to Usability testing?

- (a) Can be used to generate non-statistical or statistical data
- (b) Can be used at the end of a project
- (c) Can be used as a good measure of efficiency
- (d) Is a method for suggesting intuitive structures
- (e) Users can be asked to follow the think-aloud protocol

13) A good error message should

- (a) use double negatives
- (b) not use all uppercase letters
- (c) use attention-grabbing techniques cautiously
- (d) use more than four different font sizes per screen
- (e) use colors appropriately

14) Which of the following is/are true with respect to Task Analysis?

- (a) Task analysis is the study of the way people perform their jobs.
- (b) Task analysis contributes primarily to identify system requirements.
- (c) Task analysis gathers both declarative and procedural knowledge.
- (d) Task analysis is similar to scenario-based design.
- (e) Task analysis is quick or cheap to do.

15) Which of the following is/are (an) advantage(s) of High-fidelity Prototypes?

- (a) Fully Interactive
- (b) Use for explorations and tests
- (c) Lower Development cost
- (d) Complete functionality
- (e) Evaluate multiple design concepts

16) What is the correct term to fill the blank space of the following sentence?

\_\_\_\_\_ involves encouraging an invited group of intended/actual users of a system to share their thoughts, feelings, attitudes and ideas on a certain subject.

- (a) Usability testing
- (b) Focus group
- (c) Persona
- (d) Interview
- (e) Card sorting

17) Which of the following Usability Design Principles belongs to the main category of Learnability?

- (a) Visibility
- (b) Navigation
- (c) Feedback
- (d) Consistency
- (e) Familiarity

18) Which of the following is/are (an) advantage(s) of Low-fidelity Prototypes?

- (a) Useful communication device
- (b) Useful for identifying requirements
- (c) Useful for evaluating multiple design concepts
- (d) Higher development cost
- (e) Look and feel of the final product

19) Which of the following is/are (a) disadvantage(s) of a Command Line Interface (CLI)?

- (a) High error rates
- (b) Heavy reliance on memory
- (c) Low error rates
- (d) Steep learning curve
- (e) Not suitable for repetitive tasks

20) Which of the following is/are true with respect to Human-Computer Interaction?

- (a) It is a discipline that relates only to Computer Science.
- (b) It is a multidisciplinary subject.
- (c) It is a discipline that organizes interaction between man and computing devices.
- (d) It fills the gap between user and computing devices.
- (e) Interaction is a main component of the HCI model.

21) Which of the following statements is/are true regarding the Mental model in Human-Computer Interaction?

- (a) Mental model includes what a person thinks is true, not necessarily what is actually true.
- (b) Mental model is independent on the user's belief
- (c) Mental model allows a person to predict the results of his actions
- (d) Mental model of users is not a concern in UCD
- (e) Mental model evolves with the Interaction

22) Which of the following is/are (a) disadvantage(s) of a touch-sensitive screen?

- (a) Cannot be used for menu selection
- (b) Requires a specialized pointer
- (c) Difficult to perform accurate drawing
- (d) Finger can mark screen
- (e) Not easy to select small regions

23) The following two groups A and B are related to novel interface design. Select the correct matching between items in group A with appropriate ones in group B.

Group A	Group B
A1. Multitasking	B1. The device can be handled in different ways to do the same task
A2. Multiple ways	B2. Some people like to do tasks in a specific way
A3. Simplify the interface	B3. A device can be used to increase the productivity
A4. Customization	B4. Modify the device to facilitate a user to perform tasks easily.
A5. Personalization	B5. Single device to perform multiple tasks

- (a) A1→B3, A2→B4, A3→B5, A4→B1, A5→B2
- (b) A1→B5, A2→B1, A3→B3, A4→B4, A5→B2
- (c) A1→B5, A2→B4, A3→B3, A4→B2, A5→B1
- (d) A1→B4, A2→B1, A3→B5, A4→B3, A5→B2
- (e) A1→B2, A2→B3, A3→B1, A4→B4, A5→B5

24) Which of the following is/are **incorrect** with respect to stated Design Principles for Usability?

- (a) “Visibility”: Affects the functionality of a system, irrespective of physical limitation
- (b) “Conviviality”: Aggressive messages and interruptions could help a system to improve conviviality
- (c) “Affordance”: Buttons should be designed allowing people to change their status by pressing it
- (d) “Navigation”: Breadcrumbs trails in a display page may be used to say “where you are”
- (e) “Control”: Make it clear who or what is in control and allow people to take control

25) Select the appropriate option below, in relation to the following 3 statements on the concepts of User Centered Design.

I. Participatory design actively involves users in the design and decision-making processes.

II. Focus groups generally produce statistical data.

III. Card sorting is usually used as an input to design.

- (a) Only I is correct
- (b) Only III is correct
- (c) Only II and III are correct
- (d) Only I and III are correct
- (e) All three statements are correct

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