



UNIVERSITY OF COLOMBO, SRI LANKA

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL)

Academic Year **2019** – 2<sup>nd</sup> Year Examination – Semester 3

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

***30<sup>th</sup> June 2019***  
***(ONE HOUR)***

Important Instructions :

- The duration of the paper is **1 (one) hour**.
- The medium of instruction and questions is in English.
- The paper has **25 questions** and **06 pages**.
- All questions are of the MCQ (Multiple Choice Questions) 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 question paper first and then transfer them to 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) In the context of rich interaction with devices, *sensors* enable

- (a) Motion detection
- (b) Detection of environmental conditions
- (c) Audio processing
- (d) Converting electrical signals into physical signals
- (e) Multi-channel connection between users and devices

2) Which of the following is a/are basic component/s of the HCI Model?

- (a) Human User
- (b) Modality
- (c) Interaction
- (d) Usability
- (e) Computer

3) Which of the following is an/are advantage/s of prototyping?

- (a) Enables early detection of errors
- (b) Users can see a solution emerging that meets their needs
- (c) System documentation is often absent or incomplete
- (d) Users can try the system and provide constructive feedback during development
- (e) System backup and recovery, performance, and security issues can be overlooked

4) Which type of user interface(s) provides input by typing a string on the keyboard?

- (a) Graphical user interface
- (b) Command line user interface
- (c) Natural user interface
- (d) Menu interface
- (e) Gesture-based Interface

5) Which is the **most suitable definition** for an interface metaphor?

- (a) An idea taken from the real world that is used to help the user understand what to do (eg: click on tabs to change window contents, store items to be purchased using a shopping cart)
- (b) The kind of technical and software framework within human-system takes place (eg: WIMP, mobile, tangible)
- (c) What the human does to make inputs and receive information from the system (eg: click and drag an object, talk to an object, move closer to an object, converse with an entity, etc)
- (d) The conceptual model used to guide the design of the interface.
- (e) An instruction on an interface signaling how to use the interface.

6) What is the main interaction mode for a Microsoft Kinect system?

- (a) Gesture and body movements
- (b) Haptic (touch) interface
- (c) Pointing and Clicking
- (d) Infrared position detection
- (e) Exploring and browsing

7) Which of the following is a/are slip/s in human error?

- (a) Press the Cancel button when planning to Save
- (b) Manual addition in a spreadsheet
- (c) Typing mistakes
- (d) Format using blank spaces
- (e) Forgetting to save a document when shutting down the computer

8) What is the correct statement to complete the blank space in the following sentence?

\_\_\_\_\_ predicts that the time to point at an object using a device is a function of the distance from the target object and the target object's size

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

9) Personas are helpful because they

- (a) explore different ways to use the same system
- (b) provide a consistent model for all team members
- (c) capture user characteristics
- (d) validate the models for design
- (e) help identify multiple goals

10) Which individual invented the mouse?

- |                       |                    |              |
|-----------------------|--------------------|--------------|
| (a) Douglas Engelbart | (b) J.R. Licklider | (c) Alan Kay |
| (d) Tim Berners Lee   | (e) Vannevar Bush  |              |

- 11) What is the correct word to complete the blank space in the following sentence?  
\_\_\_\_\_ is the design aspect of an object which suggests how the object should be used; a visual clue to its function and use.
- |                 |                |                |
|-----------------|----------------|----------------|
| (a) Consistency | (b) Visibility | (c) Constraint |
| (d) Flexibility | (e) Affordance |                |
- 12) A Natural User Interface can accept input in the form of
- |                    |                   |            |
|--------------------|-------------------|------------|
| (a) String command | (b) Speech        | (c) Images |
| (d) Touch          | (e) Body movement |            |
- 13) Which of the following is/are true with respect to ergonomics in Human-Computer Interaction?
- |   |
|---|
| (a) Ergonomics is a legal requirement   |
| (b) Ergonomics lowers operational costs of running a business                           |
| (c) Ergonomic factors may affect the lifetime of the product                            |
| (d) Ergonomics is a result of design errors due to wrong identification of requirements |
| (e) Customization facilities of an interface will help to improve ergonomics            |
- 14) Which of the following is/are addressed by providing accelerators (e.g. keyboard shortcuts)?
- |                |                  |                |
|----------------|------------------|----------------|
| (a) Efficiency | (b) Learnability | (c) Visibility |
| (d) Utility    | (e) Likeability  |                |
- 15) Which of the following is a/memory propagation technique/s in human memory?
- |               |               |               |
|---------------|---------------|---------------|
| (a) Semantics | (b) Attention | (c) Deduction |
| (d) Rehearsal | (e) Inclusion |               |
- 16) What is the difference between slips and mistakes?
- |  |
|--|
| (a) They are interchangeable terms that both mean “human error.”   |
| (b) Slips refer to human errors, and mistakes refer to software-system errors.   |
| (c) Slips occur due to novice behavior whereas mistakes occur due to Unconscious behavior.   |
| (d) Mistakes occur when the user intends to perform one action but instead ends up doing another (similar action). Slips occur when users have goals that are inappropriate for their tasks. |
| (e) Slips occur when the user intends to perform one action but instead ends up doing another (similar action). Mistakes occur when users have goals that are inappropriate for their tasks. |

- 17) Which of the following statements is/are true regarding the Swiss Cheese Model?
- (a) An undetected error may occur in a layer
  - (b) A catastrophic error could occur due to weaknesses in a fewer layers
  - (c) Modular or Layered architecture needs to be organized to avoid system failures
  - (d) Each slice of cheese is an opportunity to stop an error
  - (e) The number and size of holes in each slice of cheese affect the probability of errors
- 18) Which of the following is **best described** by the statement given below?
- "An informal narrative description of human activities or tasks in a story that allows exploration and discussion of contexts, needs, and requirements."
- |              |                        |             |
|--------------|------------------------|-------------|
| (a) Use case | (b) Storyboard         | (c) Persona |
| (d) Scenario | (e) Essential use case |             |
- 19) PACT consists of four main components namely People, Activities, Context, and Technologies. Which of the following is a/main feature/s of an Activity component?
- (a) Financial aspects
  - (b) Safety-critical
  - (c) Complexity
  - (d) Temporal aspects
  - (e) Design aspects
- 20) Which of the following statements is/are true regarding the mental model in Human-Computer Interaction?
- (a) Mental model is independent of the user's belief
  - (b) Mental model evolves with the Interaction
  - (c) Mental model affects the user behavior when interacting with technology
  - (d) Mental model of users is not a concern in User Centered Design
  - (e) A metaphor will create a strong effect on the Mental model at the beginning
- 21) Which of the following is a/benefit/s of usability?
- (a) Increase customer satisfaction
  - (b) Efficiency of completing a task
  - (c) Minimize the cost of User training
  - (d) Reduced maintenance costs
  - (e) Increase development time and costs

22) In the context of human-computer interaction, which of the following is/are true with respect to batch processing?

- (a) There is no time gap between input and output
- (b) The user always feels that he is in control
- (c) Users get instant feedback
- (d) The user has to wait to obtain the system feedback to interact with the system
- (e) Waiting time will increase the gulf of evaluation

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

- (a) Accessibility is an important legal and ethical requirement
- (b) Accessibility comes before usability
- (c) Exclusion does not affect accessibility
- (d) Aging and awareness affect accessibility
- (e) Adaptability affects accessibility

24) Which of the following statements is/are true with respect to focus groups?

- (a) Participants are typically selected to be a representative sample of the target population.
- (b) Focus groups are appropriate for discussing sensitive topics.
- (c) Focus groups are most often used as an input to design.
- (d) Focus groups are used in the final stage of the design cycle.
- (e) Focus groups can be used to obtain information about a domain

25) Usability is concerned with

- (a) how many people can use a website at a time
- (b) the appearance of a website or a product
- (c) the ease of use with which a user can interact with a system
- (d) the length of time it takes for a web page to load
- (e) removing the barriers that would otherwise exclude some people from using the system at all

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