University of Colombo, Sri Lanka

University of Colombo School of Computing

BIT

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL)

Academic Year 2022 — 2nd Year Examination — Semester 4
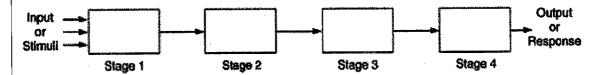
IT4106 — User Experience Design

Part 1 - Multiple Choice Question Paper
(1 Hour)

Important Instructions

- This paper has **two (2) parts, Part 1** and **Part 2**.

- The duration of this part (Part 1) is **1 Hour**.

- The medium of instructions and questions is English.

- This paper has **25 questions** on **6 pages**. Answer **all** questions.

- All questions are of the **MCQ** (Multiple Choice Questions) type.

- Each question will have **5 (five)** choices with <u>**one or more**</u> correct answers.

- This paper consists of 100 marks and all the 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 -1 (All the incorrect choices are marked & no correct choices are marked) to +1 (All the correct choices are marked & no incorrect choices are marked). However, **the minimum mark per question would be zero**.

- 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/invigilator 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.

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1) Which stage of the Double Diamond process emphasizes the importance of divergent and convergent thinking, encouraging exploration and then focusing on the best ideas?

(a) Discover

(b) Define

(c) Develop

(d) Deliver

(e) Decorate

2) Which of the following represents the four (4) stages of the double diamond process in order

(a) Discover, Develop, Define, Deliver

(b) Define, Discover, Decorate, Develop

(c) Discover, Define, Develop, Deliver

(d) Decorate, Develop, Deliver, Discover

(e) Define, Develop, Discover, Deliver

3) Which of the following interaction type was introduced most recently

(a) Instructing   (b) Conversing   (c) Exploring

(d) Responding   (e) manipulating

4) Which of the following is an example of experiential cognition?

(a) Analyzing statistical data to make informed decisions.

(b) Using logical reasoning to solve complex mathematical problems.

(c) Engaging in a deep philosophical debate and contemplating abstract concepts.

(d) Collaborating with others in a group project and sharing different perspectives.

(e) Hopping on a bicycle to try and learn to ride

5) Which of the following is an example of reflective cognition?

(a) Solving complex mathematical problems intuitively.

(b) Making a decision based on a deep understanding of all available options.

(c) Choosing a familiar brand without considering alternatives.

(d) Engaging in critical thinking and questioning assumptions.

(e) Reflecting on personal experiences and biases.

6) What is the cognitive process that allows people to focus on a specific stimulus in the environment?

(a) Attention   (b) Perception   (c) Memory

(d) Learning   (e) Reasoning

7) Which of the following most accurately describe Usability?

   (a) Usability is concerned with how many people can use your site at a time
   (b) Usability is concerned with the appearance of your site or product
   (c) Usability is concerned with the ease of use with which a user can interact with your product
   (d) Usability is concerned with the length of time it takes for a web page to load
   (e) Usability is concerned with adding complexity to the system

8) Which of the following is/are TRUE about cognition and its different processes?

   (i) These are higher level functions of the brain and encompass language, imagination, perception and planning.
   (ii) The process of attention refers to how information is acquired from the environment via the five sense organs and transformed into experiences
   (iii) Problem-solving, planning, reasoning, and decision-making are processes involving reflective cognition.

   (a) i only
   (b) ii only
   (c) i and ii only
   (d) i and iii only
   (e) All i , ii and iii

9) Amongst which of the following shows the user-centered design process in the correct sequence?

   (a) Specify Requirement→Understand→Evaluate against requirements→Design Solutions
   (b) Specify Requirement→Understand→ Design Solutions → Evaluate Solutions
   (c) Understand → Specify Requirement → Design Solutions → Evaluate against requirements
   (d) Understand → Specify Requirement → Analyze Requirements → Evaluate Solutions
   (e) Understand → Design Solutions → Specify Requirements → Evaluate against requirements

10) Given below is an illustration of the human processor model used in cognitive frameworks.

Which of the following represents the correct sequence of the stages of human processor model.

   (a) Encoding→Compression→ Response selection→ Decoding
   (b) Encoding→ Comparison→ Response selection→ Decoding
   (c) Encoding→ Comparison→ Response selection→ Response execution
   (d) Encoding→ Response selection → Comparison → Response execution
   (e) Encoding→ Compression → Response selection→ Response execution

11) Which of the following is/are TRUE about mental models

    (i) Mental Models are influenced by cultural background and societal norms
    (ii) Mental Models guide perception, interpretation, and decision-making.
    (iii) Mental Models are developed to help in generating novel ideas and alternative solutions

(a) i only	(b) ii only	(c) iii only
(d) i and ii only	(e) All i , ii and iii	

12) "_____ is concerned with explaining the cognitive processes involved when we interact with elements such as graphical images, multimedia, and virtual reality."
Which of the following is most suitable to fill the blank in the above statement?

(a) Distributed cognition	(b) External cognition	(c) Floated cognition
(d) Co-presence	(e) Computational offloading	

13) Which of the following is/are TRUE about affective computing?

    (i) Mostly used to refer to techniques to draw user's attention to certain kinds of information in an attempt to change what they do or think
    (ii) Concerned with how to use computers to recognize and express emotions in the same way as humans
    (iii) involves creating, manipulating, and making meaning through our engaged interaction with physical things

(a) i only	(b) ii only	(c) iii only
(d) i and ii only	(e) All i , ii, and iii	

14) Which of the following technologies blends digital content with the real world?

(a) Augmented Reality (AR)	(b) Virtual Reality (VR)	(c) Mixed Reality (MR)
(d) Artificial Intelligence (AI)	(e) Internet of Things (IoT)	

15) Which technology completely replaces the real world with a virtual environment?

(a) Augmented Reality (AR)	(b) Virtual Reality (VR)	(c) Mixed Reality (MR)
(d) Artificial Intelligence (AI)	(e) Internet of Things (IoT)	

16) Which of the following is/are non- probability sampling techniques used in gathering data.

(a) Random Sampling	(b) Systematic Sampling	(c) Snowball Sampling
(d) Convenience Sampling	(e) Purposive sampling	

17) Which of the following is/are examples of triangulation in data gathering?

(i) Using different theories with which to interpret data
(ii) Collecting data from users in different ways with different methods
(iii) Collecting information about user mental model, conceptual model and system image

(a) i only

(b) ii only

(c) iii only

(d) i and ii only

(e) i and iii only

18) Which of the following statements with regards to interfaces is/are **TRUE**.

(i) Haptic interfaces allow a human to interact with a computer through bodily sensations and movements.
(ii) Tangible interfaces are mainly used to interact with multiple people at the same time.
(iii) Haptic interfaces use small electric signals that rapidly move from neuron to neuron, which to a certain extent can be detected by electrodes that are placed on a person's scalp

| (a) i only | (b) ii only | (c) i and ii only |
| (d) i and iii only | (e) All i, ii and iii | |

19) Which of the following is/are TRUE with regard to data analysis?

(i) Critical incident analysis is a qualitative data analysis approach.
(ii) Correlation analysis is a qualitative data analysis approach.
(iii) Regression analysis is a qualitative data analysis approach

| (a) i only | (b) ii only | (c) i and ii only |
| (d) i and iii only | (e) All i, ii and iii | |

20) "_____ Requirements: refer to the circumstances in which the interactive product will operate". Which of the following is most suitable to fill the blank in the above statement?

| (a) Discourse | (b) Functional | (c) Data |
| (d) Environment | (e) Usability | |

21) Which of the following is/are TRUE with regard to "Direct Observation in Controlled Environments."

(a) Observing users may occur within a natural setting

(b) Less formal method than conducting observation in the field

(c) Recommended to prepare a script to guide participants

(d) Diary studies are a popular method used in this type of studies

(e) When participants are scattered and when the activity is private

22) | Which of the following best describes the primary usage of Personas?

(a) Enhancing visual aesthetics

(b) Guiding the development process

(c) Conducting usability testing

(d) Conducting market research

(e) Optimizing search engine rankings

23) | Which of the following is/are TRUE with regard to qualitative data?

(i) Qualitative analysis can be represented by patterns and stories.
(ii) Qualitative data can be converted into a set of numbers
(iii) Thematic analysis is a popular method used in qualitative analysis

(a) i only

(b) ii only

(c) iiii only

(d) i and iii only

(e) All i, ii and iii

24) | Which usability evaluation method involves asking a group of experts to evaluate a system based on a predefined set of usability principles?

| (a) Heuristic evaluation | (b) walkthroughs | (c) Predictive modeling |
| (d) Ethnography | (e) Design thinking | |

25) | Which of the following is/are (a) part of Jakob Nielsen's ten general principles for interaction design?

| (a) Visibility of System Status | (b) Error Prevention | (c) Consistency and Standards |
| (d) Aesthetic and Minimalist Design | (e) Recall rather than recognition | |

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