



UNIVERSITY OF COLOMBO, SRI LANKA

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

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

(ONE HOUR)

Important Instructions :

- The duration of the paper is **1 (one) hour**.
- The medium of instruction and questions is English.
- The paper has **25 questions** and **6 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.
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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 represent the (4) four 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) <u>Exploring</u> |
| (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 a complex mathematical problem 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) <u>Attention</u> | (b) Perception | (c) Memory |
| (d) Learning | (e) Reasoning | |

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

- | | |
|----------------------|----------------|
| (a) <u>Attention</u> | (b) Perception |
| (c) Memory | (d) Learning |
| (e) Reasoning | |

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

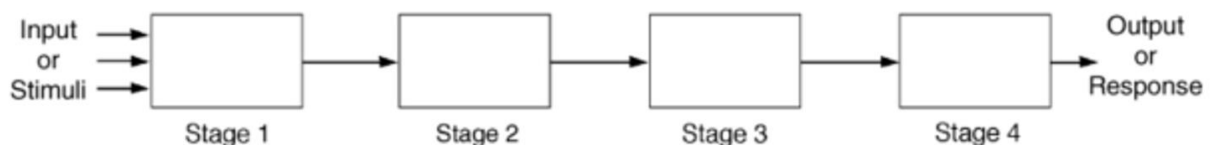
- (i) These are higher level functions of the brain and encompass language, imagination, perception and planning.
- (ii) The process of attention refers to how information is acquired from the environment via the five sense organs and transformed into experiences
- (iii) Problem-solving, planning, reasoning,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

- | |
|---------------------------|
| (a) i only |
| (b) ii only |
| (c) i and ii only |
| (d) <u>i and iii only</u> |
| (e) All i , ii and iii |

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

- | |
|--|
| (a) Specify Requirement→Understand→Evaluate against requirements→Design Solutions |
| (b) Specify Requirement→Understand→ Design Solutions → Evaluate Solutions |
| (c) <u>Understand → Specify Requirement → Design Solutions → Evaluate against requirements</u> |
| (d) Understand → Specify Requirement → Analyze Requirements → Evaluate Solutions |
| (e) Understand → Design Solutions → Specify Requirement → Evaluate against requirements |

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



which of the following represent the correct sequence of the stages of human processor model.

- | |
|---|
| (a) Encoding→Compression→ Response selection→ Decoding |
| (b) Encoding→ Comparison→ Response selection→ Decoding |
| (c) <u>Encoding→ Comparison→ Response selection→ Response execution</u> |
| (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) <u>i and ii only</u> | (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) <u>External cognition</u> | (c) distributed 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) <u>ii only</u> | (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) <u>Augmented Reality (AR)</u> | (b) Virtual Reality (VR) | (c) <u>Mixed Reality (MR)</u> |
| (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) <u>Virtual Reality (VR)</u> | (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) <u>Snowball Sampling</u> |
| (d) <u>Convenience Sampling</u> | (e) <u>Purposive sampling</u> | |
- 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) <u>ii only</u> | (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 can be used to interact with multiple people at the same time.
 - (iii) Haptic interfaces use small electric signals 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) <u>i and ii only</u> |
| (d) i and iii only | (e) All i, ii and iii | |
- 19) Which of the following is/are TRUE with regards 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 qualitative data analysis approach
- | | | |
|--------------------|-----------------------|-------------------|
| (a) <u>i only</u> | (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) <u>Environment</u> | (e) Usability | |
- 21) Which of the following are TRUE with regards 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) <u>Recommended to prepare a script to guide how the participants</u>
(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 describe the primary usage of Personas?
- | |
|--|
| (a) Enhancing visual aesthetics
(b) <u>Guiding the development process</u>
(c) Conducting usability testing
(d) Conducting market research
(e) Optimizing search engine rankings |
|--|

23) Which of the following is/are TRUE with regards 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) iii 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) <u>Heuristic evaluation</u> | (b) walkthroughs | (c) Predictive modeling |
| (d) Ethnography | (e) Design thinking | |

25) Which of the following is/are (a) part of Jakob Nielsen's 10 general principles for interaction design?

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