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**UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR**

**END OF SEMESTER EXAMINATIONS
YEAR THREE SEMESTER TWO EXAMINATIONS**

**FOR THE DEGREE OF
BACHELOR OF SCIENCE COMPUTER SCIENCE**

**COURSE CODE : CSC 323
COURSE TITLE : HUMAN COMPUTER
INTERACTION**

DATE: 20/04/2023

TIME: 9.00AM-11AM

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO

SECTION A [30 MARKS] ANSWER ALL QUESTIONS.

[30 MARKS]

QUESTION ONE

- a) List any three problems a user encounters when interacting with bad interfaces. (3 Marks)
- b) (i) What is a mental model? (1 Mark)
- (ii) Describe any three cognitive processes outlining the design implications for each development of systems. (6 Marks)
- c) Two theoretical frameworks that help understand how and why people interact with products are mental models and external cognition. With the help of an example, briefly describe each of these frameworks. (6 Marks)
- d) What is heuristic evaluation? Outline the phases when conducting a heuristic evaluation. (6 Marks)
- e) Distinguish between storyboards and scenarios. (2 Marks)
- f) A more modern framework in considering the design of interactive technology is David Benyon's PACT framework. Describe the four key elements of PACT, and briefly explain the considerations designers should make when considering each of these elements. (6 Marks)

[20 MARKS]

QUESTION TWO

- a) From your experience of reading about and trying a heuristic evaluation and cognitive walk-through, how do you think they compare for evaluating a website in terms of the following? (3 Marks)
- (i) The time typically needed to do each kind of evaluation (3 Marks)
- (ii) The suitability of each method for evaluating a whole website
- b) Most people are familiar with the "404 error" message that pops up now and again when a web page does not upload for the link they have clicked or when they have typed or pasted an incorrect URL into a browser. What does it mean and why the number 404? Is there a better way of letting users know when a link to a website is not working? Might it be better for the web browser to say that it was sorry rather than presenting an error message? (6 Marks)
- c) Produce an HTA for the process of buying a book from an online store. (6 Marks)
- d) Give a short statement of the ISO standard for usability. (2 Marks)

[20 MARKS]

QUESTION THREE

- a) What knowledge is needed to build an adoptive help system? which do you think is most difficult to provide and why? (5 Marks)
- b) Discuss how internet multimedia communication collaborations (video conferencing, virtual reality) may cause problems with social interactions between cultures. (5 Marks)
- c) Explain the differences between design guidelines, standards and principles. Provide one example for each of them. (6 Marks)
- d) It is recommended that one should apply both user tests and expert methods simultaneously. why? (4 Marks)

[20 MARKS]

QUESTION FOUR

- a) What aspects would you want to evaluate for the following systems; (5 Marks)
- (i) A personal music service?

- (ii) A website for selling clothes? (5 Marks)
- b) Task analysis is the process of learning about ordinary users by observing them in action to understand in detail how they perform their tasks and achieve their intended goals. Describe any of two commonly used techniques in task analysis, use an example to elaborate. (4 Marks)
- c) Give short explanation about: (6 Marks)
- (i) Learnability
 - (ii) Flexibility
 - (iii) Robustness

QUESTION FIVE

[20 MARKS]

- a). Sketch simple icons to represent the following operations to appear on a digital camera screen: Turn image 90-degrees sideways, Crop the image, Auto-enhance the image, More options. (8 Marks)
- b) Distinguish between low fidelity prototyping and high fidelity prototyping. Briefly describe a method in each of the above mentioned prototyping. (6 Marks)
- c) How can banks overcome the problem of providing a secure system while making the memory load easier for people wanting to use online and mobile phone banking? (6 Marks)