UNIVERSITY OF LONDON

GOLDSMITHS COLLEGE

Department of Computing

B. Sc. Examination 2018

IS53034B
Interaction Design

Duration: 2 hours 15 mins

Date and time:

This paper is in two parts: part A and part B. You should answer ALL questions from part A and TWO questions from part B. Part A carries 40 marks, and each question from part B carries 30 marks. The marks for each part of a question are indicated at the end of the part in [.] brackets.

There are 100 marks available on this paper.

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FROM THE EXAMINATION ROOM

Part A

Answer all questions in Part A

Question 1

State and describe TWO of Norman's principles of design. [4]

Question 2

What is an interface metaphor? Why is it useful? Explain, using an example. [4]

Question 3

Describe TWO advantages and TWO disadvantages of EACH of these methods: [4]
a) low-fidelity prototypes
b) high-fidelity prototypes

Question 4

Novice users find icons easier to use than a command line interface. Why? [4]

Question 5

Explain the difference between open card sorting and closed card sorting. [4]

Question 6

Although humans often rely on spoken natural language to communicate with each other, spoken language has only recently become a more common form of human-computer interfaces. Give TWO reasons why it is limiting. [4]

Question 7

Describe the differences between *indirect* and *direct* observational studies. Give an example for each of where they would be useful. [4]

Question 8

Fitts' Law is a model of human movement in human-computer interaction and ergonomics:

$T = a + b \log_2 \left(1 + \frac{D}{W} \right)$

Describe what Fitt's Law states and explain why it is useful in interaction design. [4]

Question 9

Describe TWO advantages and TWO disadvantages of EACH of these methods: [4]
a) focus groups
b) online questionnaires

Question 10

According to Norman, what's the difference between a designer's conceptual model and a user's mental model? [4]

Part B

Answer TWO questions only in Part B

Question 11   Design Scenario

You work in a design team which is involved in the user-centred development of a screen-based interface for a driverless car.

(a) Describe and justify the prototyping methods you would select for this scenario.   [10]

(b) Draw and annotate prototype sketches for the new interface.   [10]

(c) Explain the cognitive walkthrough method of evaluation and outline the process of carrying out a cognitive walkthrough of your interface.   [10]

Question 12   User Requirements

You have been asked to design a voice-controlled smart home device which has the potential to control any other smart devices in the home.

(a) Describe the personal characteristics of this user base.   [4]

(b) Create TWO different user personas who might use this system.   [10]

(c) Create TWO different task scenarios for this system.   [8]

(d) Write a Hierarchical Task Analysis for using the device to set the room temperature to 20°C.   [8]

Question 13   Evaluation

The College has just designed new web pages that are aimed at providing information about work placements for students wanting to work experience. You are a usability consultant who is tasked with providing advice about usability and evaluation.

(a) Outline THREE methods you would use to gather usability criteria.   [6]

(b) Describe FOUR usability measurements you might take in this study.   [8]

(c) How could a sorting method be used to measure usability in this study? Give examples.   [8]

(d) How could heuristic evaluation be used to test usability in this study? Describe the process.   [8]