

“Research Methods in Human Computer Interaction” by J. Lazar, J.H. Feng and H. Hochheiser (2010)

Example test questions PLUS ANSWERS

Module Intelligent Interaction Design, 2016-2017

Below are example questions about Chapters 1-5, 8, 11, and 14 of the “Research Methods” book. You can expect some open questions and some multiple choice questions about this book in each of the HCI Design & Evaluation tests (the HCI reader will tell you which chapters of the book should be studied for which test). In the interest of grading efficiency, the third test will include more multiple choice questions.

Example open questions

1. Why could it be a good idea to ask demographic questions at the end of a survey?
Answer: Those questions are not very interesting to answer. To motivate people to read the survey and complete it, it may be better to start with more interesting questions.
2. What does the term conceptual mapping refer to?
Answer: Asking participants to draw pictures or graphical layouts that describe their understanding of a situation.
3. A limitation of using surveys and interviews for context analysis is that they suffer from ‘problems of recall’. What is meant by this?
Answer: Because the survey or interview is disconnected from the context under consideration, participants have to rely on their memory to describe their needs and experiences. This may cause their answers to be removed from reality.
4. Have a look at the stages of the grounded theory method:
 - A development of concepts
 - B formation of a theory
 - C grouping concepts into categories
 - D open coding

Put the stages in the right order from start to end.

Answer: D, A, C, B

5. In content analysis, what is the difference between a priori coding and emergent coding?

Answer: In a priori coding the coding categories are identified in advance, based on related literature. In emergent coding they are based on an examination of a subset of the data.

6. What is an advantage of a within-subject experiment design compared to a between-subject experiment design?

Possible answers: (1) A within-subject design requires fewer participants. (2) A within-subject design reduces the impact of individual differences between participants in case of complex tasks.

7. What is the purpose of significance tests?

Answer: to show how confident we are to generalize the results obtained from the sample data to the target population.

Example multiple choice questions

1. Please have a look at these survey questions:

(A) Do you think that this prototype is nice?

(B) What do you like about this prototype?

(C) Do you like prototype X or Y better?

(D) On a scale of 1 to 5, how much do you like this prototype?

Which of these questions are closed questions?

(a) None of them is a closed question

(b) A, C, and D are closed questions, B is not

(c) A and C are closed questions, B and D are not

(d) all of them are closed questions

answer: b

2. Consider the statements:

(i) Closed ended questions with an ordered response often allow for several answers.

(ii) Closed ended questions with an un-ordered response should never allow for several answers.

Are these statements true or false?

(a) Both statements (i) and (ii) are false.

(b) Only statement (i) is true

- (c) Both statements (i) and (ii) are true.
- (d) Only statement (ii) is true.

answer: a

3. Consider the statements:

- (i) Semi-structured interviews require the interviewer to ask questions in a fixed order.
- (ii) In unstructured interviews, the interviewer is not allowed to ask questions to the participant.

Are these statements true or false?

- (a) Both statements (i) and (ii) are false.
- (b) Only statement (i) is true
- (c) Both statements (i) and (ii) are true.
- (d) Only statement (ii) is true.

answer: a

4. Please have a look at the following statements. Grounded theory is...

- A a qualitative research method
- B a deductive research method
- C a quantitative research method
- D an inductive research method

Which of these statements are true?

- (a) A and D
- (b) A and B
- (c) C and D
- (d) B and C

answer: a

5. Which of the following is not an accepted source for coding categories in content analysis:

- (a) Original terms provided by the participants
- (b) The researcher's interpretation
- (c) Factor analysis
- (d) An existing theoretical framework

answer: c

6. Reliability refers to...
- (a) the contingency of results
 - (b) the confidence of results
 - (c) the content of results
 - (d) the consistency of results

answer: d

7. To determine the interrater reliability between two coders, one can calculate Cohen's Kappa (K). Which of the following Kappa values indicates satisfactory agreement between the ratings?
- (a) $K < .40$
 - (b) $.40 < K < .60$
 - (c) $.60 < K < .80$
 - (d) $K > .80$

answer: c

8. Consider the two statements about the sensitivity and the specificity of a test instrument.
- (i) Sensitivity = $P(\text{false negatives}) = P(\text{Actual Presence Positive} \mid \text{Test outcome negative})$
 - (ii) Specificity = $P(\text{false positive}) = P(\text{Test outcome Negative} \mid \text{Actual Presence positive})$

Which of the two statements is true?

- (a) Both are true
- (b) (i) is true, (ii) is false
- (c) Both are false
- (d) (i) is false, (ii) is true

answer: b

9. In the context of experiment design, what does the term "experimental unit" refer to?
- (a) A participant
 - (b) A room where the experiment takes place

- (c) A complete set of all the tools used for the experiment
- (d) A complete run of the experiment

answer: a

10. What is the “Hawthorne effect”?

- (a) The potential influence of the mere act of participating in an experiment on the user’s behaviour
- (b) The effect that participants give responses that are in line with the experimenter’s expectations
- (c) A cognitive bias in which an observer’s overall impression of a product influences the observer’s feelings and thoughts about that entity’s character or properties
- (d) The tendency to search for, interpret, or remember information in a way that confirms one’s beliefs or hypotheses

answer: a

11. Which of the following is **not** a measure of central tendency of a dataset?

- (a) The mean
- (b) The median
- (c) The mode
- (d) The range

answer: d

12. The Wilcoxon signed ranks test is the non-parametric alternative for the paired t-test. When do we use the test instead of a paired t-test?

- (a) The data is collected by means of a Likert scale
- (b) The independent t-test is not applicable
- (c) In case the data is collected from a within-group design but it is not from a population that is normally distributed
- (d) In case we can not use the χ^2 test

answer: c

13. Please have a look at the following terms.

- A beneficence
- B justice
- C sociability

D respect for persons

Which of these terms refer to a basic principle of informed consent?

- (a) B and D
- (b) B, C, and D
- (c) A and C
- (d) A, C, and D

answer: d