

8 Human–Computer Interaction (AFB)

This question is concerned with the following design problem: Design a visualisation that will be useful to candidates sitting an exam such as the one you are sitting now. This visualisation should help the user to plan his or her time, allocating time to various questions. Elements of the visualisation might include estimated time to be spent on each question and part of a question; the amount of credit to be awarded for each part; the estimated likelihood of a correct answer; dependencies between parts (where correctness of one part depends on correctness of another); the remaining time; degree of fatigue; any other relevant factors, or any relevant subset of these. This visualisation could be used as the basis for an interactive screen-based assistant, but could also be incorporated in an augmented reality headset, or even implemented with pencil and paper.

- (a) Make sketches of two alternative visual representations that might address this problem. If your design is intended to include coloured elements, colours may be indicated by text annotations on the sketch or with a separate key, rather than using coloured ink. The two alternative sketches should demonstrate different approaches to the problem. [4 marks]
- (b) Contrast the design decisions in your two alternative sketches, discussing how the marks and regions on the page correspond to their intended meaning. [6 marks]
- (c) Define what is meant by “analytic usability evaluation” and “empirical usability evaluation” techniques. [2 marks]
- (d) Using an analytic evaluation technique, compare two different ways in which user experiences with your proposed designs would be expected to differ from each other. [4 marks]
- (e) Describe how you would conduct an empirical evaluation to compare user experiences with your proposed designs. [4 marks]