

9 Further Human–Computer Interaction (afb21)

- (a) Augmented reality displays such as the Microsoft HoloLens allow elements of the display to be registered against objects in the physical world. Briefly explain how such a display could be used for an Internet of Things application, setting different temperatures for multiple rooms in a home heating system. [1 mark]
- (b) Explain how this compares to the use of visual metaphor on a conventional display for the same application, taking account of the correspondence between graphical resources and their representational purpose. [3 marks]
- (c) Describe an alternative approach to visual representation that could be more efficient for setting desired temperature in a large number of rooms, for example in a multi-storey office building. Your description should mention three different categories of graphic resource, explaining the design principles for each of them in relation to this application. [8 marks]
- (d) Choose three cognitive dimensions that are especially relevant to this problem, and explain how these dimensions would be different if the temperature settings were being adjusted using a speech interface such as Amazon Alexa or Google Assistant. [6 marks]
- (e) How could an ethnographic approach be used to develop an alternative theory of correspondence relevant to this problem? [2 marks]