COMPUTER SCIENCE TRIPOS  Part IB – 2023 – Paper 7

**10  Further Human–Computer Interaction (afb21)**

In future, many households will have a limited energy budget. Diverse household members are likely to have different energy requirements that must be negotiated within that fixed overall budget.

This question relates to the design of a shared display that can be used by household members to monitor and discuss their respective energy usage. The display will be primarily graphical, rather than using text or numbers.

(*a*)  Make a sketch of the display layout, which addresses the scenario above, and can be used to answer the remainder of the question. Use arrows to label the four elements referred to in the next part. [2 marks]

(*b*)  Name *four* different types of graphical mark or property that have been used as the basic elements of the overall design. [2 marks]

(*c*)  For *each* of these types of graphical mark, explain:

(*i*)  What it looks like (its appearance).

(*ii*)  What it represents (its meaning).

(*iii*) The nature of the correspondence between its appearance and meaning in your design.

[12 marks]

(*d*)  Describe how qualitative empirical data could be collected and analysed to evaluate and improve this design concept. [4 marks]