5   Software and Interface Design (AFB)

The following design brief was prepared by the client for one of the 2016 Cambridge group design projects.

We would like you to make a hazard warning app on the smartwatch Pebble. When a user takes their Pebble for a jog, he/she can record GPS location and details of any potential hazard they come across on the road, such as broken pavement, dog dirt, flooding. After the run, they can pair their Pebble to a computer program or mobile app, and upload the data via an interactive map. This allows other Pebble users to download the data, and receive an alarm when they are near the hazard. The relatively constrained set of controls on the Pebble, and the constraint that the jogger will want to work quickly before cooling down, means that you will need to provide an intelligent text entry method.

(*a*) For each of the following software project phases, suggest a design model or representation that would be a helpful aid in the design process. For each of these, sketch an example to show what this model looks like, based on some part of the above design brief.

    (*i*)   Inception phase

    (*ii*) Elaboration phase

    (*iii*) Construction phase

    (*iv*) Transition phase

[12 marks]

(*b*) For each of the sketched examples in part (*a*), describe how the design work so far could be evaluated before proceeding to the next phase.   [4 marks]

(*c*) Choose two of the above design models, representations or evaluation methods, and explain how they would be done differently if the project plan was following an agile rather than spiral project management approach.   [4 marks]