8   Software Engineering (RJA)

You are advising the new Secretary of State for Work and Pensions following the 2015 election and the failure of the previous government's Universal Credit scheme for modernising welfare payments. The government's policy is to move away from a "big project" approach to system change and instead have a platform on which benefits can be rolled out, or old benefits modified, as needed. The new Secretary of State wants to develop a concept of how such a system will operate that will find favour with Cabinet colleagues.

Suppose as an example a minister decides to award a pension supplement to disabled people over 80 and their carers.

(a) Describe the processes and issues likely to be involved in:

   (i)   establishing a business requirement and likely cost;   [4 marks]

   (ii) determining what changes are needed to platform applications or other systems;   [4 marks]

   (iii) deciding whether such changes should be prototyped in the hope of avoiding unforeseen consequences or for other reasons;   [4 marks]

   (iv) assessing how to maintain any important emergent properties of the system as a whole (such as security, safety and fairness).   [4 marks]

(b) What lessons might be drawn from the failures of other public-sector systems in the past?   [4 marks]