Distributed Systems

(a) Define strong and weak consistency. [2 marks]

(b) A process group manages a set of widely distributed replicas. The group is open and unstructured; that is, external processes may invoke any group member for reading or writing.

(i) Discuss how the replicas can be kept strongly consistent in the presence of concurrent invocations and failures. [12 marks]

(ii) Would it be more appropriate to use a structured group (with a single co-ordinator) to manage the replicas? Justify your answer. [6 marks]

Your solution should discuss the selection and use of algorithms and protocols. It is not necessary to specify them in great detail.