1. To help counter terrorism, many countries are planning the development of computer systems that track large numbers of their citizens and their actions. Clearly, this has privacy implications. Discuss the ethics of developing this type of system.
2. Is it ethical for an engineer to agree to deliver a software system with known faults to a customer? Does it make any difference if the customer is told of the existence of these faults in advance? Would it be reasonable to make claims about the reliability of the software in such circumstances?
3. A flood warning system is to be procured which will give early warning of possible flood dangers to sites that are threatened by floods. The system will include a set of sensors to monitor the rate of change of river levels, links to a meteorological system giving weather forecasts, links to the communication systems of emergency services (police, coastguard, etc.), video monitors installed at selected locations, and a control room equipped with operator consoles and video monitors.   
   Controllers can access database information and switch video displays. The system database includes information about the sensors, the location of sites at risk and the threat conditions for these sites (e.g., high tide, southwesterly winds), tide tables for coastal sites, the inventory and location of flood control equipment, contact details for emergency services, local radio stations, and so on.

**Draw a block diagram of a possible architecture for such a system**. You should identify the principal sub-systems and the links between them.

1. Explain why legacy systems can cause difficulties for companies that wish to reorganize their business processes.
2. Discuss the problems and challenges that software engineering is likely to face in the **fourth industrial revolution**.