

*FOR INTERNAL SCRUTINY (date of this version: 17/12/2017)*

UNIVERSITY OF EDINBURGH  
COLLEGE OF SCIENCE AND ENGINEERING  
SCHOOL OF INFORMATICS

**PROFESSIONAL ISSUES**

**Thursday 1<sup>st</sup> April 2010**

**00:00 to 00:00**

Year 3 Courses

Convener: ITO-Will-Determine  
External Examiners: ITO-Will-Determine

**INSTRUCTIONS TO CANDIDATES**

**Answer QUESTION 1 and ONE other question.**

**Question 1 is COMPULSORY.**

**All questions carry equal weight.**

**This is an OPEN BOOK examination.  
You may consult any books or other documents during this examination.  
The use of Calculators is permitted.**

**1. This question is COMPULSORY.**

A mobile software company has retained you to consult on aspects of their products. With the advent of the Internet of Things and the spread of WiFi to most indoor locations the company has developed software that can be incorporated into a mobile phone app that maps the location of WiFi and Internet of Things hubs and uses that map to provide highly accurate location information on mobile phones in indoor locations. The company has entered into a partnership with a major chat company to embed their software in an instant messaging app. The app provides IM services and tracks the user to communicate the tracking information back to the IM company who use the data to build indoor maps of shopping malls, real-time information on shopper flow and to provide precisely targeted advertising linked to the user's current location.

- (a) As a professional, you feel the need to discuss your professional obligations before undertaking the contract. What are the two key aspects of the BCS code of conduct you would raise with the organisation before agreeing to work with them? Select your two aspects and justify why you would choose these as the two main points to raise with the company. [6 marks]
- (b) List the first three questions you would ask the company about its software and provide a justification for their importance in terms of the legal operation of the company. [9 marks]
- (c) The company has little expertise in the General Data Protection Regulation (GDPR). Identify two aspects of the GDPR that are likely to impact on this software. Provide a justification for each of your choices. [6 marks]
- (d) The company wants to be seen as a leader in ethical software. Provide two ethical principles that are important in this context. Justify your choice. [4 marks]

**2. You should either answer this question or question 3.**

There is concern over the operation of widespread Internet surveillance operations by the Police and other government organisations across most democracies in the world. In the UK the Investigatory Powers Act gives the UK government very wide powers. Currently the UK Act does not comply with EU Law because it allows “*general and indiscriminate retention of data without independent oversight.*”. It is likely the Act will be changed to comply with EU law.

You have been retained by your local Police Force to contribute to a communication campaign to help the local population to understand surveillance and its role in protecting citizens.

- (a) Write brief notes on three issues that are relevant to the communication campaign. The notes should clearly identify the issues and justify their importance from a police perspective. [9 marks ]
- (b) For each of the issues you have identified above provide brief notes that present a balancing perspective that looks at the wider consequences of such legislation. [9 marks ]
- (c) Organised crime, and other national states are identified as key targets of surveillance powers. Provide two reasons why you believe these powers are unlikely to be effective against such organisations. Justify your reasons. [7 marks ]

**3. You should either answer this question or question 2.**

The *Public Bodies (Joint Working)* act of the Scottish Parliament "...provides the framework which will support improvement of the quality and consistency of health and social care services through the integration of health and social care in Scotland." In Scotland, health care is provided by NHS Scotland while Social Care is provided by the local authority (these are forms of local government that supply services such as education, roads, water and drainage, to people living in the locality).

- (a) From your knowledge of Organisational Structures what sort of organisation are these public sector bodies likely to have? Justify your answer. [4 marks]
- (b) Provide brief notes on three issues that are likely to arise from the organisational structure when these organisations attempt to work jointly. [9 marks]
- (c) Health and Care in Scotland is embarking on a large scale deployment of Decision Support Algorithms that aim to support staff delivering health and care to make better decisions:
  - i. What do you see as the two main challenges in implementing such a programme? [6 marks]
  - ii. Provide brief notes on two of the possible unintended consequences of automated decision support in this context? [6 marks]