UNIVERSITY OF EDINBURGH

COLLEGE OF SCIENCE AND ENGINEERING

SCHOOL OF INFORMATICS

PROFESSIONAL ISSUES

Thursday 14$\underline{^{th}}$ August 2014

14:30 to 16:30

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.

Year 3 Courses

Convener: S. Viglas
External Examiners: A. Cohn, T. Field

THIS EXAMINATION WILL BE MARKED ANONYMOUSLY

1. **You MUST answer this question.**

SASPI, the Scottish Accord on the Sharing of Personal Information, provides a personal information sharing framework for service-providing organisations in Scotland. It defines five principles that should guide any decision to share personal information concerning an adult:

- ***Principle 1: benefit:*** *any action or decision taken must benefit the adult and only be taken when that benefit cannot reasonably be achieved without it.*

- ***Principle 2: least restrictive:*** *any action or decision taken should be the option that restricts the person's freedom as little as possible but at the same time enables the purpose of the action to be achieved.*

- ***Principle 3: take account of the past and present wishes and feelings of the adult:*** *In deciding if an action or decision is to be made, and what that should be, account shall be taken of the present and past wishes and feelings of the adult, as far as they can be ascertained. The person should be offered appropriate assistance to communicate their views (for further guidance see Appendix 1 of guidance on the Adults with Incapacity (Scotland) Act 2000). Note: that it is compulsory to take account of the present and past wishes and feelings of the adult if these can be ascertained by any means whatsoever.*

- ***Principle 4: consultation with relevant others:*** *In deciding if an action or decision is to be made and what that should be, account shall be taken of the views of: the nearest relative and the primary carer of the adult; the adult's named person; any guardian or attorney with powers relating to the proposed intervention; any person whom the Sheriff has directed should be consulted; any other person appearing to have an interest in the welfare of the adult or the proposed action, where these views have been made known to the person responsible — insofar as it is reasonable and practicable to do so.*

- ***Principle 5: encourage the adult to exercise whatever skills he or she has and to develop new skills as far as possible.***

(a) You have been asked to comment on the SASPI principles from the perspective of an ICT professional. Review the SASPI principles against the BCS code of Conduct and identify two potential issues that might arise for a professional working to implement a system to support personal information sharing in Scotland. For each issue, justify your opinion. [*7 marks*]

QUESTION CONTINUES ON NEXT PAGE

(b) Suppose you are working on a system to support service providers making decisions on whether to share personal information. Review the SASPI principles against the new EU data protection regulations. Identify one area where the principles and regulations are in harmony and another where there is potential conflict. For each, provide a justification for your opinion. *[6 marks]*

(c) "Powerpoint is the Devil's underpants." Discuss [For non-native English speakers, this should be seen as a criticism of Powerpoint. It suggests a connection with evil or wrongdoing.] *[7 marks]*

(d) Explain how each of the following is relevant to Informatics and PI.

   i. Daniel Ellsberg.
   ii. Glen Greenwald.
   iii. Ladar Levison.
   iv. Edward Snowden.
   v. Aaron Schwartz. *[5 marks]*

2. Imagine you are working for a company that produces a range of products it sells to businesses in the wellbeing market across Europe. For example, it sells data management solutions to gyms to provide a platform for personalised training by integrating data from all the exercise machines in the gym; it also provides cloud-based data management for companies with activity monitors like fitbit or the Nike fuelband; and it provides customer relationship management systems to companies running weight-reduction clubs. The company wants to expand into new territories, in particular the Americas, China, India and Africa. This move has prompted the board to reconsider the organisational structure of the company. You have been tasked with writing a short appraisal of relevant options. Your report should have the following structure:

   (a) **Description and appraisal of option 1:** In this section you should provide a description and evaluation of a potentially adoptable organisational structure for your company. You should focus on the top-level breakdown in the organisational structure. Your description should provide:

      i. An outline description of the organisational structure. [*4 marks*]
      ii. A brief discussion of the advantages of the structure for your company. [*3 marks*]
      iii. A brief discussion of any disadvantages of the structure for your company. [*3 marks*]

   (b) **Description and appraisal of option 2:** This should be a description of a different organisational structure to that of option 1 that has different advantages and disadvantages to option 1 and is a potentially adoptable option. Your answer should have the same structure as for option 1 (and will be marked according to the same mark breakdown). [*10 marks*]

   (c) **Comparisons of options 1 and 2:** The final section of your report should compare the two options and provide a reasoned case for the adoption of one structure over the other. [*5 marks*]

3. Consider the following text.

> Let's start with describing what Web 2.0 is. This term was created, by chance, by Tim O'Reilly in a conference session in 2004 ("I first heard the phrase 'Web 2.0' in the name of the Web 2.0 conference in 2004" [web].) It doesn't mean any technological changes, nor design changes, even though a few years later Web 2.0 was starting to be used in describing modern-looking websites, usually identified by a logo having a shadow or a beta/alpha badge, what it means is a change in how the web is perceived. Rather than web being just about displaying text and rich media like images, Web 2.0 is all about interactive applications and collaboration.
>
> This was a paradigm shift in semantics of web, this report doesn't focus on that much, however Web 2.0 also "introduced" or in other words started pushing towards rich user interfaces. Rather than a website being a static page, which has links and forms linking to other pages, developers started to look for ways to make web applications behave closer to desktop applications. Which were always more responsive and functional than websites. AJAX was created - Asynchronous JavaScript and XML, a collective group of technologies which utilise JavaScript client-side and XMLHttpRequest (XHR) API to establish asynchronous connections and a server-side application.
>
> AJAX allows applications to fetch more data whenever a client site JavaScript application decides to, without a user issuing this action. This allows to update certain parts of pages without refreshing the whole application, hence a web mail application can be constantly updating Inbox's list of messages rather than user having to refresh the page to know if he got any mail. Take further, applications like Google Maps could be built, allowing to interact with a dataset bigger than would normally be consumed by a user, by loading only the parts of map which are required to be visible. But since they are loaded asynchronously, with a fast-enough broadband connection, user could zoom into a map and immediately get a higher detail map.

(a) Rewrite the above text in at most one third as many words, without losing any significant information. (It should serve as a drop-in replacement for the above text.) [*13 marks*]

(b) Rewrite the text again, but this time as a series of examples, replacing each abstract point by concrete imagery. (Favour concrete examples rather than metaphor. Because each general point is replaced by a specific example, it need not serve as a drop-in replacement for the above text.) [*12 marks*]