Answers

1. Special Simulation Systems is a company that creates simulation software. Their employees are highly skilled programmers and IT professionals who are expected to follow the Code of Practice published by the British Computer Society.

a) One of the topics that the code covers is that professionals need to “Maintain their technical competence”. Describe **two** ways in which employees can achieve this. [4]

Attend relevant courses so that they can network with other professionals / update their knowledge

Read technical publications to get up to date technical knowledge

Attain relevant qualifications so that they qualified to undertake their job

Keep up to date with technical advances so that they are aware of best practice / new technologies

b) Another topic that the code covers is that professionals must “Participate maturely”. Describe **one** way in which employees can achieve this. [2]

Participate maturely:

Provide constructive criticism of colleagues’ or juniors’ work so that they can improve

Accept constructive criticism of your own work so that you can improve

Maintain good working relationships with colleagues and customers or users to reduce stress / increase efficiency / increase customer satisfaction

Take the views of others into account so that services/products are of a better standard / issues can be highlighted

c) Discuss the impact of ensuring that employees ‘maintain their technical   
competence’ on both the company and its employees. [6]

Answers will be credited according to the learner’s demonstration of knowledge and understanding of the material, using the indicative content and level descriptors below. The indicative content that follows is not prescriptive. Answers may cover some/all of the indicative content but learners should be rewarded for other relevant answers.

Learners should discuss the impacts to both the company and its employees.

Company impacts

* They need to organise the courses.
* They need to pay for employees to take external courses.
* They need to pay for speakers/presenters to give courses on site.
* Time needs to be taken off from normal work to attend courses. This results in a loss of productivity in the short term and needs to be balanced against the benefits of any course.
* More productive employees will improve the profitability of the company.  
  Better educated employees will be able to introduce creativity / fresh ideas to the company.

Employee impacts

* Employees will benefit by having courses that help them to do their jobs to a higher standard.
* This will give them increased confidence / new ideas / promotion opportunities / improved salaries / opportunities for jobs at different companies or locations.
* Employees may need to give up personal time to study or attend courses.
* This may be during anti-social times or during the weekend.
* This may have an impact on their family / personal life.

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| **Mark scheme (award up to 6 marks)** | | |
| **Level** | **Mark** | **Descripton** |
| Level 0 | 0 | No rewardable material. |
| Level 1 | 1-2 | Technical vocabulary is used but it is not used appropriately to support arguments, in relation to the issues of the question.  Issues are identified but chains of reasoning are not made, leading to a superficial understanding.  Does not link arguments to the given scenario. |
| Level 2 | 3-4 | Accurate technical vocabulary is used to support arguments but not all arguments are relevant to the issues of the question.  There is consideration of relevant issues using logical chains of reasoning.  Considers the various elements of the question and but does not always link arguments to the given scenario. |
| Level 3 | 5-6 | Fluent and accurate technical vocabulary is used to support arguments that are relevant to the issues of the question.  There is a balanced and wide ranging consideration of relevant issues, using coherent and logical chains of reasoning that shows a full awareness.  Carefully considers the various elements of the question and links arguments to the given scenario. |

2. The text below describes how Cambridge Analytica harvested the profiles of millions of Facebook users as part of a sophisticated cyber-campaign to influence the American electorate to vote for Donald Trump in the 2017 US elections.

In 2014, Cambridge Analytica entered into a commercial arrangement with Global Science Research, (GSR), owned by a Cambridge academic, Dr Alexandr Kogan (who later changed his name to Dr Spectre, before changing it back again). In 2014, Kogan set out to acquire personal data by means of a psychological profiling tool which used Facebook data.

The scheme worked as follows:

Stage 1

Kogan advertised for people who were willing to be paid $2-$5 to take a detailed personality/political test that required them to log in with their Facebook accounts. The test included pictures like the two shown below, asking the question, “How important should this message be to all Americans?”

Stage 2

At the end of the test, participants gave permission to the company to access their Facebook profiles – including their friends’ data. On average, each of the 320,000 people who took the personality test also gave access to at least 160 other people’s profiles. These friends would not have realised this. Within weeks, Kogan had collected millions of profiles.

Stage 3

The app collected data such as *likes* and personal information from the test-taker’s account, as well as their friends’ data.

Stage 4

The personality quiz results were paired with the participants’ Facebook data, such as *likes*, to discover psychological patterns.

Stage 5

Algorithms combined the data with other sources such as voter records to create a superior set of records (initially 2 million people in 11 key states in the USA) with hundreds of data points per person.

Stage 6

These people were then targeted with highly personalised advertising and propoganda.

The parent company of Cambridge Analytica was a company called SCL group, which had expertise in ‘psycological operations’ (psyops) and was a UK and US defence contractor. SCL Elections had previously used similar tools to affect more than 200 elections around the world.

(Source: “The Cambridge Analytica files”, The Observer 18/03/18)

Discuss the motivation and behaviour of Cambridge Analytica, with particular reference   
to the ethics and morals of their actions. [8]

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Learners should discuss the moral and ethical arguments of the case.

Arguments finding the case immoral / unethical

Facebook data collected on ‘friends’ or ‘friends of friends’ was harvested without their permission

The test takers did not know how their data was going to be used and would not have expected data for a personality test to have been used in this way. As such, they could not have been assumed to have consented to this use of their data.

Psyops / psychological operations are a technique used in warfare and not appropriate for civilian populations in peacetime.

Using such methods can subvert democracy and the democratic process.

The use of technology in this way is not transparent

Rather than using persuasion and argument, the techniques attempt to use psychological methods that are not expected by those targeted. In traditional advertising, most people understand the techniques that are being used to try to alter opinions.

Using propaganda to affect peoples voting decisions can be considered unethical or immoral when compared to reasoned argument

Arguments finding aspects of the conduct moral / ethical

Facebook users agreed to their data being shared with a third party

Facebook terms and conditions allowed their data to be shared with third parties

People involved in Cambridge Analytica may have felt they were acting within the law and therefore ethically.

Concluding arguments

Users would overwhelmingly find that this use of data went against their personal moral code and expectations of data processing. It would not be reasonable to suggest that users had consented to the user of their data in this manner, especially in the case of ‘friends’ data, and as such this use is unethical.

The news story was one of the biggest of 2018 and led to

* Facebook being fined £500,000 for breaches of the Data Protection Act
* Facebook’s CEO, Mark Zuckerburg had to testify before Congress and has been summoned to a House of Commons committee in the UK
* Facebook’s reputation was severely damaged with 26% of US customers deleting the Facebook app from their phone
* On 1st May 2018, Cambridge Analytica and its parent company closed

The case is particularly important given how it was used in a presidential election.

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Further information:

<https://www.theguardian.com/news/2018/mar/17/data-war-whistleblower-christopher-wylie-faceook-nix-bannon-trump>

<https://www.theguardian.com/news/series/cambridge-analytica-files>

[Total 20 marks]