Oxford Cambridge and RSA Examinations

A Level Computer Science

H446/01 Computer Systems

Practice Paper – 1.5 Legal, moral, cultural and ethical issues

Time allowed: 1 hour

INSTRUCTIONS TO CANDIDATES

- Write your name, centre number and candidate number in the boxes above.

- Use black ink. HB pencil may be used for graphs and diagrams only.

- Answer **all** the questions.

- Write your answer to each question in the space provided.

- Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).

- Do not write in the barcodes.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [ ] at the end of each question or part question.

- The total number of marks for this paper is 40.

- This document consists of 5 pages.

- Quality of extended responses will be assessed in questions marked with an asterisk (*).

Candidate Name:	Centre Number:
Candidate Number:	Date:

Grade Boundaries	A*	A	B	C	D	E
Marks	36-40	32-35	28-31	24-27	20-23	16-19

Answer all questions

1. A software development company is considering implementing a new system that will use facial recognition to track employee attendance and working hours.

   (a) Identify two potential privacy concerns related to the use of facial recognition technology in the workplace.

   _____

   _____

   [2 marks] _____

   (b) Explain how the Data Protection Act 2018 would apply to the company's use of facial recognition data.

   _____

   _____

   _____

   _____

   [4 marks] _____

   (c) Discuss two measures the company could take to ensure their facial recognition system complies with the General Data Protection Regulation (GDPR).

   _____

   _____

   _____

   _____

   [4 marks] _____

2. A mobile application development team is creating a health tracking app that will collect users' personal health data and provide recommendations.

   (a) State two types of sensitive personal data that would be protected under data protection legislation when collected by the health app.

   _____

   _____

_____

   (b) Explain what is meant by 'informed consent' in the context of data collection, and why it is important for the health app.

   _____

   _____

   _____

   [3 marks] _____

   (c) The developers are considering selling anonymized user data to third-party companies for research purposes.

      (i) Explain what is meant by 'anonymized data'.

      _____

      _____

      [2 marks] _____

      (ii) Discuss one ethical issue associated with selling anonymized health data, even if it is legal to do so.

      _____

      _____

      _____

      [3 marks] _____

3. Social media platforms use algorithms to personalize content for users.

   (a) Describe two potential negative impacts of content personalization algorithms on society.

       _____

       _____

       _____

       _____

[4 marks] _____

   (b) Explain what is meant by 'algorithmic bias' and give one example of how it might occur in social media content selection.

       _____

       _____

       _____

[3 marks] _____

   (c) * Discuss the ethical responsibilities that social media companies have regarding the algorithms they use to select content for users. In your answer, consider both the benefits and potential harms of personalization algorithms.

       _____

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[8 marks] _____

4. A software company has developed an artificial intelligence system that can be used to make automated decisions in loan applications.

   (a) Identify two legal requirements under the GDPR that the company must meet when using automated decision-making systems.

   _____

   _____

[2 marks] _____

   (b) Explain what is meant by 'the right to explanation' in relation to AI decisions, and why it is important for individuals affected by automated decision-making.

   _____

   _____

   _____

[3 marks] _____