1.7 Ethical, Legal, Cultural and Environmental Impact: 30-minute Pack

OCR J277 · Calculators not allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Tomasz downloads a film from a website without paying for it, then uploads his own commentary video that plays large sections of the film without permission.

(a) Explain why Tomasz's actions are illegal under the Copyright, Designs and Patents Act 1988. **(2)**

(b) State one way in which a content creator could legally allow others to reuse their work for free. **(2)**

(Total for Question 1 is 4 marks)

2 Millions of old phones and computers are thrown away by consumers and businesses in the UK every year.

(a) Describe two problems caused by the disposal of old computer hardware. **(2)**

(b) Describe one way manufacturers or governments try to reduce the environmental impact of e-waste. **(2)**

(Total for Question 2 is 4 marks)

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3 'Ethical hackers' are employed by many organisations to test their computer systems for weaknesses. Compare ethical hackers with black hat hackers.

(Total for Question 3 is 3 marks)

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4 Software can be described as either open source or proprietary (closed source).

(a) State whether the source code of proprietary software is normally available for the public to view. **(1)**

(b) State whether the source code of open source software is normally available for the public to view. **(1)**

(c) Give one reason a business might choose proprietary software over open source software. **(1)**

(d) Give one reason a business might choose open source software over proprietary software. **(1)**

(Total for Question 4 is 4 marks)

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5 Most websites use cookies to track visitors and target adverts based on their browsing habits. Explain why cookie tracking can still raise concerns about informed consent and privacy.

(Total for Question 5 is 3 marks)

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6 Many UK supermarkets have replaced checkout staff with self-service tills, and some warehouses now use robots to pick and pack orders. Evaluate the impact of this increased automation on employees and wider society.

(Total for Question 6 is 6 marks)

7 Some UK police forces trial live facial recognition cameras in town centres, scanning the faces of everyone who passes and comparing them automatically to a database of people wanted by police. Discuss the ethical, legal and cultural issues raised by the use of live facial recognition in public places.

(Total for Question 7 is 8 marks)

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Mark scheme · 1.7 Ethical, Legal, Cultural and Environmental Impact: 30-minute Pack

Question 1

(a) downloading the film without paying is unauthorised copying/distribution of a copyrighted work **B1**

(a) reusing large sections of the film in his own video, without a licence or permission, further infringes the copyright holder's right to control reproduction of their work **B1**

(a) Answer: Downloading the film without paying is unauthorised copying, and re-using large sections of it in his own video without permission or a licence further infringes the copyright holder's exclusive right to reproduce and distribute their work.

(b) release the work under a Creative Commons licence (oe) **B1**

(b) the licence sets out exactly what others may do, e.g. share, adapt, must credit the creator, non-commercial use only **B1**

(b) Answer: They could release the work under a Creative Commons licence, which clearly states how others may reuse, share or adapt the work (e.g. with attribution, non-commercially) without infringing copyright.

Question 2

(a) toxic materials (e.g. lead, mercury) can leach into soil/water if sent to landfill **B1**

(a) second distinct point, e.g. valuable/rare materials are wasted rather than recovered; or e-waste is often shipped abroad with poor safety standards, harming workers' health; or it takes up landfill space and does not biodegrade **B1**

(a) Answer: Any two of: toxic materials such as lead or mercury can pollute soil and water in landfill; valuable rare materials are wasted instead of being recovered; e-waste shipped abroad can expose workers to harmful conditions; it fills landfill space and does not break down.

(b) identifies a scheme, e.g. take-back/recycling schemes, WEEE regulations, refurbishment or reselling of old devices **B1**

(b) explains how it reduces impact, e.g. recovers valuable/rare materials for reuse, keeps toxic parts out of landfill, or extends the useful life of the device **B1**

(b) Answer: For example, manufacturer take-back and recycling schemes (regulated by WEEE rules) collect old devices so that valuable materials can be recovered and toxic components are kept out of landfill, reducing the need for new raw materials.

Question 3

both use the same technical skills/methods to find weaknesses in a computer system **B1**

ethical hackers have the permission/authorisation of the system owner and report weaknesses so they can be fixed **B1**

black hat hackers act without permission and exploit weaknesses for personal gain or harm, which is illegal under the Computer Misuse Act 1990 **B1**

Answer: Both use the same technical skills to find system weaknesses, but ethical hackers have the system owner's permission and report the weaknesses so they can be fixed, whereas black hat hackers act without permission and exploit weaknesses for personal gain or harm, which is illegal under the Computer Misuse Act 1990.

Question 4

(a) no, it is kept private/hidden by the company that owns it **B1**

(a) Answer: No, the source code is kept private by the company that owns it.

(b) yes, it is published so anyone can view, use and change it **B1**

(b) Answer: Yes, it is published so that anyone can view, use and change it.

(c) e.g. comes with dedicated technical support/guaranteed updates from the vendor (oe) **B1**

(c) Answer: It often comes with dedicated technical support and guaranteed updates from the company that sells it.

(d) e.g. usually free to use/licence and can be customised to the business's exact needs (oe) **B1**

(d) Answer: It is usually free to licence and can be customised or adapted to suit the business's exact needs.

Question 5

users often click 'accept' without reading or understanding what data will be collected, so consent may not be fully informed **B1**

detailed profiles of a person's interests, habits or location can be built up and used or sold without them realising the extent of it **B1**

raises the question of whether consent obtained this way is genuinely meaningful, since accepting cookies is often required to use the site at all **B1**

Answer: Users often click accept without reading what is collected, so consent may not be fully informed; detailed profiles of a person's habits can then be built up and used or sold without them realising, and since accepting cookies is often required to use the site at all, the consent given may not be genuinely free or meaningful.

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Question 6

Level 1 A basic, largely one-sided answer with limited or no reference to the scenario and little evaluative comment. **1-2**

Level 2 Some relevant points on the impact of automation, with limited development or balance between benefits and drawbacks. **3-4**

Level 3 A well-balanced evaluation of the impact on employees and wider society, clearly applied to the scenario, with a reasoned overall judgement. **5-6**

Indicative content:

- Automation can lead to job losses for roles that are easily automated, e.g. checkout staff and warehouse pickers, causing unemployment or loss of income for affected workers.
- Automation can also create new jobs in different areas, e.g. maintaining or programming the robots and IT support, so some workers may be able to retrain.
- Businesses may benefit from lower staffing costs and more consistent efficiency, which could lower prices for customers.
- Workers without digital or technical skills may struggle to find new employment, widening inequality between digitally skilled and unskilled workers.
- Reduced human interaction at checkouts may disadvantage vulnerable customers who rely on staff for help, showing a cultural/social cost.
- An overall judgement should weigh economic benefits (efficiency, lower costs, new tech roles) against social costs (job losses, inequality, reduced human contact).

Question 7

Level 1 A basic or generic answer referring to at most one strand (ethical, legal or cultural), with little detail or link to the scenario. **1-2**

Level 2 A small number of relevant points are made, with limited development and limited balance between different strands or viewpoints. **3-4**

Level 3 A range of ethical, legal and/or cultural issues are discussed with good development and some balance between viewpoints. **5-6**

Level 4 A well-balanced, detailed discussion across ethical, legal and cultural strands, clearly applied to the scenario, with a reasoned evaluative conclusion. **7-8**

Indicative content:

- Ethical: the system scans everyone in the area regardless of suspicion, which some see as treating the public as suspects and an invasion of privacy.
- Ethical: facial recognition systems have been shown to be less accurate for some groups, raising concerns about unfair or biased outcomes.
- Legal: because faces are biometric personal data, use must comply with the Data Protection Act 2018/UK GDPR, requiring a lawful basis, proportionality and safeguards.
- Legal: without clear regulation there is a risk the technology is used beyond its original purpose, or without proper oversight and accountability.
- Cultural: constant scanning could change public behaviour, with people feeling watched and altering how they act in public spaces.
- Cultural: some communities may lose trust in the police if they feel unfairly targeted or watched more than others.
- Counterpoint: supporters argue the technology helps catch dangerous criminals quickly and can improve public safety.
- A reasoned conclusion weighs public safety benefits against privacy, accuracy/bias and public trust concerns to reach a justified overall judgement.

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