

## 1.6 – Ethical, legal, cultural and environmental impacts of digital technology – Past Exam Questions

1.6 – Ethical, legal, cultural and environmental impacts of digital technology	
Sub topic	Guidance
<b>1.6.1 Ethical, legal, cultural and environmental impact</b>	
<input type="checkbox"/> Impacts of digital technology on wider society including: <ul style="list-style-type: none"> <li>o Ethical issues</li> <li>o Legal issues</li> <li>o Cultural issues</li> <li>o Environmental issues</li> <li>o Privacy issues</li> </ul> <input type="checkbox"/> Legislation relevant to Computer Science: <ul style="list-style-type: none"> <li>o The Data Protection Act 2018</li> <li>o Computer Misuse Act 1990</li> <li>o Copyright Designs and Patents Act 1988</li> <li>o Software licences (i.e. open source and proprietary)</li> </ul>	<b>Required</b> <ul style="list-style-type: none"> <li>✓ Technology introduces ethical, legal, cultural, environmental and privacy issues</li> <li>✓ Knowledge of a variety of examples of digital technology and how this impacts on society</li> <li>✓ An ability to discuss the impact of technology based around the issues listed</li> <li>✓ The purpose of each piece of legislation and the specific actions it allows or prohibits</li> <li>✓ The need to license software and the purpose of a software licence</li> <li>✓ Features of open source (providing access to the source code and the ability to change the software)</li> <li>✓ Features of proprietary (no access to the source code, purchased commonly as off-the-shelf)</li> <li>✓ Recommend a type of licence for a given scenario including benefits and drawbacks</li> </ul>

2022

4\* Social networking websites use artificial intelligence (AI) to monitor posts from users.

Discuss the positive and negative uses of AI by social networking websites including:

- Legal issues
- Ethical issues
- Privacy issues

8 marks

(c) Tick (✓) **one** box on each row to identify the legislation that would cover each of the given events.

Event	The Data Protection Act (2018)	Computer Misuse Act (1990)	Copyright Designs and Patents Act (1988)
A company transmits personal data to another company without the individual's permission.			
A school accidentally publishes their students' addresses on the school website.			
The interface for a piece of software is replicated by a rival company.			
A user leaves a computer logged on and another person leaves them a message on their desktop.			
A student guesses their teacher's password and accesses their computer account.			

[5]

Sample Paper

- (d) **Fig. 2** lists some actions that may take place in the law company's office. Tick (✓) **one** box in each row to show which legislation applies to each action.

Action	Data Protection Act 2018	Computer Misuse Act 1990	Copyright Designs and Patents Act 1988
Using a picture for the law company's new logo without the original creator's permission.			
A secretary accessing a lawyer's personal email account without permission.			
Making a copy of the latest Hollywood blockbuster movie and sharing it with a client.			
Storing customer data insecurely.			
A lawyer installing a key logger on the secretary's computer.			
Selling client's personal legal data to a marketing company without their permission.			

**Fig. 2**

[6]

- 11 \* People often want to buy the most up-to-date smartphones, even though the smartphone they own still works.

Discuss the impact of people wanting to upgrade to the latest smartphone.

In your answer, you might consider the impact on:

- smartphone users
- cultural issues
- ethical issues
- environmental issues.

8 marks

2021

- (c) When Layla has finished her educational game, she is going to release it as open source.

Give **one** benefit and **one** drawback of Layla releasing her game as open source.

Benefit .....

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Drawback .....

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[2]

- 3 A technology company brings out new, updated devices twice a year.

- (a) Describe the environmental impacts of the company bringing out new devices twice a year.

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- (b) Describe the cultural impacts of the company bringing out new devices twice a year.

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- 4\* A school asks its students to bring in their own electronic devices (e.g. tablets, laptops, mobile phones) to use in lessons instead of purchasing new equipment.

Discuss the issues surrounding students bringing their own devices. Include in your discussion:

- ethical issues
- legal issues
- privacy issues.

8 marks

- 8 Identify the legislation that relates to the following scenarios:

A programmer wants to protect their work from being copied or distributed.

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A person logs into a computer without permission by guessing the password.

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A person makes a request to view financial information held by a public authority.

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A hacker gains access to a company's files over a network without permission.

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A company collects data that it does not need about its customers.

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[5]

2020

- 4\* Daniel is a medical researcher trying to find a cure for a disease. He has a team of hundreds of people carrying out medical testing.

Recent developments in Artificial Intelligence (AI) mean that a computer program could do the work of dozens of researchers in a much shorter time. Daniel decides to increase his use of Artificial Intelligence.

Discuss the issues surrounding this decision. Consider the following in your answer:

- ethical issues
- legal issues
- cultural issues

[8]

2019

- 6 Fiona is a software engineer. She is creating a new version of a computer game she released three years ago.

Fiona is considering selling the game online and not making it available physically in shops.

- (a) Describe the environmental impact of Fiona's decision.

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- (b) Fiona releases her game under a proprietary licence.

Explain why a proprietary licence is a more appropriate choice than open source.

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