**Learning Aim C - Wider Implications of Digital Systems**

3. **Equal Access**

1. Equal access to service and information
2. Digital exclusion and divide
3. Benefits of equal access to organisations, individuals and wider society (p.79)
4. Barriers to digital inclusion (infrastructure, cost, lack of skills, accessibility)
5. Digital Economy Act 2017 – guarantees right of all UK residents to a minimum standard broadband connectivity
6. Legal requirements (Equality Acts 2010)
7. Professional guidelines/ accepted standards
8. Net Neutrality (level playing field, No ISP restrictions and overcharging for services)
9. Electronic communications and Wireless Telegraphy Regulations 2011

2. **Environmental Issues**

1. Manufacture (many IT equipment are made of materials that are non-reusable)
2. Use and energy consumption (a PC uses approx. 600kW/ year, Mobile 300kw/year)
3. Disposal (e-waste; Waste Electronic Equipment Regulations (WEEE) 2018)
4. Upgrade and Replace
5. Usage and setting policies
6. Hardcopy versus electronic distribution
7. **Shared Data**
8. Digital foot print (active and passive digital footprint)
9. Location-based data (GPS)
10. Transactional data (exchange between individuals and organisations)
11. Cookies (session cookies, persistent cookies)
12. Data exchange between services
13. Benefits and drawbacks of using shared data
14. Responsible use
15. Legal considerations, privacy and ethical use (Data Protection Acts 1988 – how organisations collect and use data; Privacy and Electronic Communications Regulations 2003 – how cookies can be used)

4. **Acceptable Use Policies**

1. Acceptable use policy (UAP) – acceptable behaviour and unacceptable behaviour, mentoring, sanctions and agreement
2. Blurring of social and business boundaries
3. Use of social media for business purposes
4. Impact of personal use of digital systems on professional life (image and reputation, Data protection Act 2018)

5**. Data Protection**

1. Data protection principles (lawfulness, fairness, transparency, purpose limitation, data minimisation, accuracy, storage limitation, security, accountability, transfer)
2. Data subject’s rights (obligations of organisations)
3. Data and the use of internet (right to be forgotten)
4. Legal use of cookies and other transactional data (Privacy and Electronic Communications Regulations (PERC) 2003
5. Intellectual Property (IP)
6. Methods of identifying and protecting IP
7. Copyright
8. Legal and ethical use of IP (licence and permission)

**1. Shared data Questions**

1. (a) Joe’s mobile phone tracks his location.

(i) Describe two potential advantages to Joe of this technology. [4]

(ii) Explain how the use of location-based data could impact on Joe's privacy. [2]

(b) Joe wants to buy a new laptop. When he visits an online store, transactional data is collected.

(i) Give two examples of transactional data the store could collect. [2]

(ii) Online stores value transactional data. Explain one reason why this is the case. [2]

2. Green Leisure is a holiday company based in the Peak District.

(a) The company's website uses cookies. State three purposes of using cookies. [2]

(b) Websites must obtain 'informed consent' from visitors before using cookies. Explain why this is necessary. [3]

3. Layla makes an appointment to see a doctor. The doctor's surgery exchanges data with the hospital and the pharmacy. Explain two ways in which this data exchange benefits Layla. [4]

4. Anke frequently travels long distances for work and is often away overnight. She is a member of a hotel rewards scheme and earns points when she stays overnight at any participating hotel. Discuss the benefits and drawbacks to the hotel chain of operating such a scheme. [6]

**2. Environmental issues Questions**

1. **Describe three ways in which IT systems are harmful to the environment.** [6]

2. **Maddie buys a new tablet. She wants to recycle her old one.**

(a) State two environmentally friendly ways in which Maddie could dispose of her old tablet. [2]

(b) Describe two other ways in which the impact of IT systems on the environment can be reduced. [4]

3. **WeStore is a cloud storage provider. The company is planning to build a new data centre. Describe how it can reduce the environmental impact of the data centre.** [3]

4. **A furniture company is going to produce a brochure of its products. Discuss the environmental impact of hard (paper) copy versus electronic distribution.** [6]

**3. Equal Access Questions**

1. Aneka lives in a rural area where access to the Internet is slow and unreliable.

(a) Explain two implications this has for Aneka. [4] (b) Give two other reasons why some people may not be able to use technology to access services and information. [2]

2. 91% of 16-24 year olds use a mobile phone to go online compared with just 21% of 65-74 year olds. Explain one possible reason for this. [2]

3. Paul has poor eyesight. Explain two 'reasonable adjustments' Paul's employer could make to enable Paul to work effectively. [4]

4. Discuss how the loss of net neutrality could impact on access to services and information. [6]

1. **Acceptable Use Policies Questions**

Nils is the IT Director at Red Top Limited. He has produced an acceptable use policy for the company.

1. Give three reasons why the company should have an acceptable use policy [3]

(b) All employees are required to sign the acceptable use policy. Explain why this is the case. [2]

2. Layla is a graphic designer. Describe two ways in which she can use social media for work-related purposes. [4]

3. Gareth works in the sales department of a company. He frequently posts on social media. Gareth is considering joining an online professional community.

(a) Explain two advantages to Gareth of joining an online community. [2]

(b) Gareth is applying for jobs in other companies. Discuss how his use of social media may influence prospective employers. [2]

1. **Data Protection Questions**

1. An online music streaming service collects data about its customers. This enables it to recommend relevant albums to them.

(a) Explain one way in which legislation protects customers from misuse of this data. [2]

(b) Explain two ways in which streaming sports content from an illegal website will impact on the content creators. (4]

2. Werner is a freelance film producer. He registers the copyright to every film he makes. Explain why content owners copyright their content [3]

3. Complete the table, with one tick in each row. [5]

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Function** | **Firewall** | **Anti-virus software** | **Device hardening**  | **Software/ interface design** | **Encryption**  |
| Permission given by the owner of a work of another person |  |  |  |  |  |
| Works that are the product of original creative thought |  |  |  |  |  |
| Grant of protection for an intervention, lasting 20 years |  |  |  |  |  |
| Legal protection for the creator of a work |  |  |  |  |  |
| A unique symbol indicating that a product is produced by a particular company. |  |  |  |  |  |

4. **Intellectual property rights are critical to the survival of a business. Explain how a business can use each of the following to protect its intellectual property.**

(a) Trademarks [2]

(b) Copyright [2]

(c) Patents [2]

(b) Copyright [2]

(c) Patents (2]

1. **Criminal Use of computer Systems Questions**

1. Complete the table to identify the legislation that applies in each situation. [5]

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Situation  | DPA  | PECR  | CMA  | DEA | CDPA |
| The inhabitants of a small village in the country rarely get broadband download speeds of above 8 Mbps. |  |  |  |  |  |
| A motorbike spares company passes its customer mailing list on to a safety equipment supplier without first asking customers. |  |  |  |  |  |
| A student streams a pirated copy of a movie she wants to watch from an online site. |  |  |  |  |  |
| A website uses persistent cookies to give customers a personalised experience but fails to tell them that it does so. |  |  |  |  |  |
| An employee uses his manager's ID and password to find out how much other people in her department earn. |  |  |  |  |  |

**DPA:** The Data Protection Act **PECR:** Privacy and Electronic Communications Regulations

**CMA:** Computer Misuse Act **DEA:** Digital Economy Act

**CDPA:** Copyright, Designs and Patents Act

2. A teenager sells virus kits on the Internet that enable other people to create and spread malware. State which offence under the Computer Misuse Act they are is guilty of. [1]

3. Cybercrime causes significant harm to individuals, organisations and society. Discuss how the Computer Misuse Act helps to deter cybercriminals. [6]