**Learning Aim A - Modern Technologies**

2. **Cloud Storage and Cloud Computing**

1. What is cloud storage?
2. Using cloud storage (setting and sharing access rights, synchronisation of cloud and individual devices, Advantages of cloud storage)
3. Cloud computing
4. Cloud Computing in business (Software as a service or SaaS)
5. Computing platforms
6. Websites
7. Selecting platforms and services (paid for versus free)
8. Number and complexity of features
9. Interface design

3. **Using cloud Technologies**

1. What is cloud computing?
2. Using cloud and traditional systems together
3. device synchronisation
4. Online/offline working
5. Notifications
6. Implications for organisations when choosing cloud technologies
7. Security of data
8. Disaster recovery
9. Compatibility
10. Maintenance
11. **Communication Technologies**
12. Wi-Fi and cells networks
13. Setting up and using ad hoc networks
14. Virtual private networks (VPN)
15. Issues affecting networks availability
16. Mobile coverage in cities
17. Open Wi-Fi
18. Network availability in developing in countries

4. **Modern teams and modern technologies**

1. Worldwide teams
2. Change to modern teams facilitated by modern technologies
3. Using technology to manage teams (collaboration tools, scheduling tools, communication tools)
4. Communicating with share holders
5. Selection of communication channels (public status update, using social media to communicate with shareholders)

5**. Inclusivity and accessibility**

1. Design inclusive interfaces
2. Interface suitable for people with limited hand movement
3. Interface settings for colour blind or partially sighted users
4. Making websites accessible
5. Design for deaf users
6. Flexibility of work and locations

6. **Impact of modern technologies**

1. Impact of modern technologies on organisations (infrastructure, security, dispersed and distributed data, collaboration, flexibility of working hours, styles and locations)
2. Inclusivity and accessibility
3. Impacts of modern technologies on individuals
4. Impact on individuals mental well-being

**1. Communication Technologies Questions**

1. **Amy is on holiday in the country. She wants to contact her friends on social media but there is no mobile signal in the house she is staying in. She goes to a local cafe which advertises a Wi-Fi connection.**
2. Give two possible reasons why she cannot get a mobile signal in the house. [2]
3. Describe one way in which she can connect to the Internet using the cafe's Wi-Fi connection. [2]

(c) Explain one security issue associated with using the network provided by the cafe. [2]

(d) State one performance issue associated with using the network provided by the cafe. [1]

**2. Ewan is travelling to work by train. There is no Wi-Fi connection and Ewan needs to connect his laptop to the Internet so that he can download some images for a report he is working on.**

* 1. Describe how he can use his mobile to set up an ad hoc network to access the Internet. [4]

(b) Occasionally Ewan loses the signal and the Internet connection is dropped. Give one reason why this might happen. [2]

(c) Describe two other issues that may influence Ewan's decision to use an ad hoc network. [4]

3**. This question is about telephone communication.**

1. Describe two issues affecting cell network availability in the UK. [4]
2. Describe one reason why telephone communication in developing countries has improved over the past few years. [2]
3. **Cloud storage and cloud computing Questions**
4. **BetterBake is a small online retailer selling kitchen tools and utensils. Their office computers are connected in a local area network with a file server which stores their company data. The file server's hard disk is almost full.**

The management has decided to move to cloud storage.

1. Describe what is meant by cloud storage. [2]
2. Explain three advantages to BetterBake of using cloud storage. [6]
3. Betterbake's management has decided to invest in cloud software which will enable members of a team putting together their next catalogue to work together on the document at the same time. Describe two facilities of the software which enable this type of collaboration. [2]
4. The BetterBake website is currently hosted on the company's web server. They have experienced problems on some occasions and have decided to engage a web provider to create and host a new website in the cloud. Describe two possible problems, apart from disk storage space, that will be overcome by having the website hosted by a web provider. [4]

2. **Joanne wants to sign up for a music streaming service. She needs the ability to download and save music on her device.**

1. Explain three other factors she should take into account when choosing a streaming service. [6]
2. Zena pays a monthly subscription to a music streaming service. One of the features the service offers is the ability to download and save music on her device. Explain two reasons why Zena may find this feature useful. [4]
3. **Using Cloud Technologies Questions**

1. **Mughal is the IT manager at HKL Ltd, a furniture manufacturer. One of his jobs is to carry out an assessment of risks to the data and software owned by the company.**

1. Give two events which could have a severe impact on the IT department's ability to continue functioning normally. [2]
2. Loss of data may be one result of a catastrophic event. Explain how the use of cloud storage can lessen the risks of data loss. [2]
3. Explain one way in which cloud storage providers can ensure that, if the data in their storage facility is hacked, the hacker will not be able to make use of the data. [2]

2. **Gemma is the Managing Director of a small, rapidly growing company. The number of employees has doubled over the past year from ten to twenty. Disk storage space on the network server is running out. She has been investigating the advantages of moving to cloud storage and cloud computing.**

1. Describe what is meant by cloud storage. [3]
2. Describe what is meant by cloud computing. [3]
3. Explain two ways in which moving to cloud storage could save money on hardware costs. [4]
4. Explain two ways in which moving to cloud computing could save money on employee costs. [4]
5. **Modern Teams and Modern Technologies Questions**

1. **Davis & Gordon is a firm of architects. They have 30 employees. They have recently changed from a traditional server-based network to a cloud computing and cloud storage system.**

(a) Their cloud computing software makes it possible for them to create teams of architects and designers working from home as well as in the office. **Explain** two benefits to Davis and Gordon of allowing employees to work from home. [4]

(b) **Describe** three tools available using cloud software that will make it easy for members of a team, some of them in the office and some working from home, to collaborate on a project. [6]

1. **VillaHolidays is a travel company which organises week-long holidays for families and groups wanting to stay in a villa in Italy or Greece. Their head office is in London and they have a local manager in each area where they manage villas rented out by the owners.**
2. Describe two modern technologies which help keep local managers informed about details of holiday bookings made by the head office in London. [4]
3. Holiday bookings can be made over the phone or online using the company website. Describe two reasons why customers may prefer to use the online booking system rather than the telephone. [4]
4. The company produces an online catalogue with one page for each villa that can be rented. They also publish a glossy, 400-page catalogue which they mail to all past customers and to anyone who requests a printed catalogue. Discuss the advantages and disadvantages of producing a printed catalogue in addition to having a website. [6]

1. **Inclusivity and accessibility Questions**

1. **Susan is a partially sighted programmer working in the head office of a large software company.**

1. **Describe** three ways in which the operating system interface can be adjusted for Susan to make it easier for her to use it effectively. (6]
2. Susan is married with two small children. **Discuss** the advantages and disadvantages to Susan of an arrangement whereby she can work at home for three days of the week. (6]

2. **Websites can be made more accessible for people with disabilities.**

1. Describe two features of a website which can help to make it accessible to a deaf person. [4]
2. Describe two benefits to a company of making a website accessible to people with disabilities. [4]
3. **Impacts of Modern Technologies Questions**

1. **Thomas owns a gym. Members book sessions on his website. Thomas uses cloud software for gym management and to plan his staff rota. Gym coaches log into the planning software to enter the hours that they are available to take classes or individual coaching sessions the following week. All the data on coaches and gym members is held in cloud storage.**

1. Describe two benefits of 'using a cloud provider in regard to the security of data.
2. Describe two essential elements of infrastructure that are required for the gym's IT systems. [4]
3. Describe one drawback of using cloud software. [2]

2. **Children are increasingly using many modern-day technologies including smartphones, social media, file sharing, and streaming services at a younger and younger age.**

1. Explain two ways in which younger users can suffer from the use of such technologies. [4]
2. Discuss the positive impacts on teenagers of using modern day technology. [6]