

# ICT BTEC Level 1/Level 2 First

## Unit 1: The Online World

Name: Form: **1. Online services 1**

A Instant messaging

**2. Online services 2**

It is cheaper and quicker to download software because the company does not need to print and post the software on a DVD.

**3. Online advertising**

Banner and pop-up adverts capture the attention of the user because they are usually animated or include a video, or appear over the text the user is trying to read.

They can retain attention by targeting a specific audience, for example an advert for a website selling saddles on a horse-riding event website.

**4. Online documents – file compression**

(a) Compression will allow all of the files to be compressed into one file and makes the file smaller, allowing Sharmeen to send it by email.

(b) To compress a file, an algorithm is used and the last item of the file is an index.  
To expand a file, the index allows the files to return to their original size.

**5. Online software and backups**

Online software can be accessed anywhere there is an internet connection so, for example, it can be used in the office or on the train.

Online software can be used on different devices, so a user can use it on a computer or mobile device and it will be the same on both.

**6. Collaborative working online**

(a) Version control is important so they know they are working on the most up-to-date version of the document.

(b) Keith and Shabina can use software which records the time and identity of the user working on the document (such as Track Changes) so they know when the latest changes were made.

**7. Online communication 1**

A business can use social networking microblogging to advertise their business and inform potential customers of the latest deals.

They could also use social networking to create a network of customers who like their products, for example using a site like Facebook. They could offer customers exclusive deals.

**8. Online communication 2**

Instant messaging requires those involved to be connected at the same time, using email does not. The messages are sent instantly across the internet, whereas in email they sit on the server until they are accessed.

**9. Voice over Internet Protocol**

VoIP can allow people who work in different countries to communicate – it can save time and money by holding meetings over VoIP instead of face-to-face.

It uses internet only so there is no additional cost (unlike phone calls)

VoIP is also cheaper than travelling and hiring a venue, because users can stay where they are to communicate.

**10. Cloud computing**

Advantages include:

- cost, because you can buy a cheaper computer with a smaller hard drive
- availability, because it can be accessed anywhere where there is an internet connection.

**11. Ubiquitous computing**

One example of where ubiquitous computing could be useful is in stock control where items are scanned to record how many are in a warehouse. Another example could be where RFID chips are put into pets so they can be reunited with their owners if they are lost.

**Learning aim B****12. The internet – hardware**

D Router

**13. The internet – network diagrams**

Client – ISP

**14. The internet – connection methods**

Low bandwidth would make the website run slowly. This is because less data can move through the cable (less bits per second), therefore the data is moving more slowly.

**15. The internet – protocols**

B FTP

(You can rule out HTML as a protocol name will finish with a P for Protocol!)

**16. World Wide Web**

The user requests a web page by using its web address (URL). A copy is downloaded from the web server onto the client's computer. It is displayed using a web browser.

**17. HTML**

```
<a href="http://www.penguins.com"><img="penguins.jpg"></a>
```

**18. URLs**

Protocol – domain name – path

**19. Search engines**

A user types key words into the search engine. All the time web crawlers are searching the internet for new or updated web pages and adding what they find into the search engine's database. The database is searched for the user's keywords. The results are displayed in order of popularity with sponsored links at the top.

**20. Email – purposes and uses**

Emails can be delivered to multiple recipients at the same time; for example they could email all of their customers at the same time with a new deal.

A disadvantage could be security because all emails are at risk from viruses that can be spread through email.

**21. Email – protocols**

SMTP is a 'push' protocol because it pushes the email from the server to the client.

POP3 is a 'pull' protocol because it pulls the email from the server to the client when requested.

## 22. Data exchange – packet switching

One advantage is security because the data is sent by different routes, if a hacker intercepts a packet, they will only obtain a section of the data, rather than all of it.

Another advantage is that the data will transmit quicker than if it was sent all in one file because smaller files travel more easily through network cables than larger ones.

A disadvantage is that if there is a problem during transmission, the packets may not be compiled correctly at the other end and the data will be corrupted.

## 23. Data exchange – transmission modes

C it transfers several bits at the same time.

## 24. Wired transmission methods

Fibre optic cable → Fast, expensive  
UTP → Cheap  
Coaxial → Slow, low capacity

## 25. Wireless transmission methods

A The printer is a long way away from the computer.

C The printer is near a kitchenette where there is a kettle and a microwave.

## 26. Client-side processing

Client-side processing may use the client's computer's clock because it will be accurate to their time zone (different for different users around the world) and accurate to the time which is seen on the user's screen.

## 27. Server-side processing

(a) Server-side processing is where the processing of a web page occurs on the web server rather than the client's machine. It is created using web scripts. An example is a web form that has been filled in and submitted for processing.

(b) One benefit is efficiency, because it is processed on the server rather than needing to download it onto the client. Another benefit is that it is browser independent, because it doesn't matter what browser the user is using as it occurs on the web server.

One disadvantage is security, because moving data over a network puts it at risk to threats such as hackers.

Another disadvantage is overloading, because if too many demands are put on the server it may run slowly or crash.

## 28. Database theory

A primary key which appears in another table is a foreign key. This creates a relationship between the two tables and allows them to connect. For example, you can search for a product in a product table and also the related supplier in a supplier table.

## 29. Databases in practice

(a) A local database can be accessed by users on that particular network.

(b) An online database can be accessed over the internet.

## 30. Threats to data

One threat which can affect a business could be a computer virus, which is a malicious program that can damage or steal data.

A second threat could be accidental damage, which could include floods and fires.

## 31. Protection of data

Any two of the following:

- Computer viruses are malicious programs which replicate and can damage or steal data. Anti-virus software can be used to scan for infected files and delete the virus or quarantine the infected files.
- Phishing emails are a threat because they pretend to be from a legitimate sender and try to trick you into clicking a link or revealing your personal details. To protect against phishing emails, users should use good practice and common sense and be alert for indicators of a fake email.
- Hackers are people who try to access areas of a network without authorisation. A firewall can protect against hackers because it monitors data going in and out of a network and can prevent hackers from gaining access.
- An opportunist threat might be a person who finds an unattended computer that has been logged into a system and they decide to use it to access unauthorised data. This could be prevented with physical security such as locks on the doors, CCTV and ensuring computers are locked or logged off when not in use.

## 32. Legislation

B He has broken UK law because he is making money from his café.

D He is likely to be fined under the Copyright, Designs and Patents Act 1988.