Activities: Solutions

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1. The Internet is a worldwide computer network, that consists of computers and networks that are linked using telephone lines, undersea cables and satellite or microwave connections for the purpose of communication and sharing resources.

2. An ISP (Internet Service Provider) is a company that has a permanent and fast connection to the Internet. These companies sell Internet access and services to individuals or organisations for a monthly fee. In other words, the school would connect to the Internet via the ISP’s Internet connection.

3. E-mail addresses, web page hosting, a fax-to-e-mail service and spam filtering services, etc.

4. Broadband refers to a high-speed, high-bandwidth connection to the Internet. This connection allows users to have fast access to websites and fast downloading and uploading. In addition, some services such as video or TV streaming will not work effectively (or will not work at all) unless the user has a broadband connection.

5. Do you need to be mobile? If you do, you would have to choose a 3G/4G connection.

6. The 21 Mbps refers to the maximum speed of the connection – in this case 21 Megabits per second. The cap is the amount of data (measured in Gigabytes) that can be downloaded and uploaded in a month (without having to pay extra). Here the cap is 2 GB.

7. a) More bandwidth is allowed downstream than upstream. This is because you need a higher speed to download web pages, music or video files than the speed needed to send an e-mail message (uploading). Therefore a higher maximum download speed of 4 Mbps is given with a lower upload speed of 512 Kbps.

b) Uncapped means that there is no limit placed on the amount of data that can be uploaded or downloaded in a month.

c) A shaped connection means that preference is given to certain services on the Internet (such as those specified, e.g. e-mail), while other services (such as VoIP) are given less preference and are slower.

d) The monthly cost would include a monthly ISP cost, as well as a fixed monthly cost for the rental of the line. You do not pay for the connection time to the Internet, but you still pay for the normal telephone calls made on the line at the normal rates.

e) No, ADSL is a permanent digital connection that operates through your fixed landline.

f) Advantages:

You can make and receive phone calls on your landline and use the line for Internet access at the same time.

You don’t need to ‘connect’ when you want to use the Internet – you have an ‘always on’ connection.

Most ADSL modem/routers include WiFi so you can access the Internet from anywhere in the house using a computer or a device like a smartphone.
Disadvantages:
ADSL may not be available in your area.
Even if ADSL is available in your area, the further you are from an ADSL exchange, the lower your maximum speed can be.
It is not a mobile solution.

WiFi is a wireless radio technology used to connect to an existing Internet connection (e.g. an ADSL connection) wirelessly.
The WiFi connectivity offered in hotels, airports and shopping malls can be called a ‘hotspot’ or an ‘access point’.
Most hotspots are protected by a password and you have to ask for the password in order to connect to the WiFi.
Public WiFi can be free (which is more common in restaurants) or it can be a service that you have to pay for, usually by the hour (which is more common in hotels and airports).
Hotels often give you a small data ‘cap’ that you may use for free.

h) Cloud storage or online storage simply means that your data is not stored on your local hard drive. It is stored on a server(s) on the Internet.

Disadvantages:
It is easy to access files anywhere as long as you have access to the Internet.
It does not take up space on your local computer.
You can share documents with other users and can work collaboratively on the same document at the same time.
It helps you synchronise your files across multiple devices so that you do not have (potentially different) multiple copies of the same document on different computers and devices.
Your documents automatically get backed up by the system.

Advantages:

i) Disadvantages:
You need to have a fast, reliable Internet connection in order to use the services effectively.
You may have to pay a monthly fee to make use of the services or to get access to the full set of features.
The software might not have all the features or capabilities of desktop software.
Your applications might run slowly, depending on the speed of your Internet connection.

8. She can connect via a smartphone or cell phone or she can use a 3G USB modem plugged into a USB port on her computer.

9. Yes, there is a better solution – most ADSL modem/routers (like the one connected to the father’s computer) has a WiFi adaptor built into it that allows you to create your own WiFi network (a wireless LAN or WLAN). Multiple devices or computers can connect to the WiFi access point and share the Internet connection.

10. The Internet is a Global Area Network or GAN as it spans the whole world and links networks together. The World Wide Web (WWW) is a service that runs on the Internet and consists of a
vast collection of interlinked and interactive documents stored on computers all over the world, which can be accessed via the Internet.

11. Google Chat is a form of instant messaging which occurs 'live' or in real-time when both parties are online. E-mail does not require both parties to be online at the same time as e-mails are sent and downloaded by the recipient when they log on to their e-mail client.

12. Examples of IM services are Mxit, BBM, WhatsApp, Google Chat and Facebook, etc.

13. WhatsApp can be used on a variety of operating systems (or platforms) such as iOS, BlackBerry and Android, whereas BBM can only be used on BlackBerry devices.

14. VoIP allows voice calls to be made over LANs, WANs and the Internet and allows you to speak to anyone anywhere in the world who also has a VoIP system.

15. You can quickly use up your data cap when using video.

16. A IM (b)
   B. Skype (a)
   C. Video conferencing (d)
   D. Chat programs (c)

17. Disadvantages or limitations:
   - E-mail is not suitable for large files as most e-mail systems place a maximum limit on the size of the attachments that you can send. Some e-mail systems block certain potentially dangerous file extensions (such as .zip and .exe) for security reasons.
   - E-mail is not always secure as other users may have access to the mail on the recipient’s computer.
   - As a way to prevent spam, many e-mail systems place restrictions on the number of recipients to whom you can simultaneously send a message.
   - E-mail is not very easy or efficient when you want to share files with many people because you have to send the file to each person you want to share it with and you have to have their e-mail addresses.

18. a) File Transfer Protocol (FTP) is a service used for the fast and easy transfer of files between computers that have an Internet connection.

   b) Advantages:
   - The files can be uploaded to an FTP server and the people who want the files can then just be given the link to access and download the file(s) from the FTP server.
   - Large files can be transferred easily without the size restrictions that are often placed on e-mail attachments.
   - Security can be maintained by using a username and password.
   - The transfer of a file can be scheduled to occur at a time when the network is not too busy.

Disadvantages:
   - Many end-users do not know how to use FTP.
• FTP connections can sometimes be interrupted and the transfer then has to be restarted.
• Not all companies have FTP servers.
• FTP can be quite technical for some users and thus they would prefer to use the easier drag and drop facilities offered by services such as Google Drive and Dropbox.

19. a) Dropbox, SkyDrive and DropitTome, etc.

b) Once you have installed the (generally) free software on your computer or device and you have registered with the site, you can then upload your files to the site. You can then send the recipient a link (and password if necessary) to the relevant folder. This link can then be used by the recipient to download the file.

c) Synchronising or ‘syncing’ means that the changes you make to a file will be updated on all of the computers or devices that are linked to that system (e.g. Dropbox). In this way, you can be sure that you always work with the latest version of a file.

d) Disadvantages:
• The amount of space allocated to save files is quite small for free usage.
• You have to pay a monthly or yearly subscription or invite more people to join the system to get extra space.
• The people you have shared folders with or given access to these folders can remove the files by mistake.

20. Grid computing is a system whereby the spare resources of many computers in a network are shared and used at the same time to solve a single problem. Grid computing is normally used for scientific or technical applications that require large amounts of data to be processed or high processing power.

21. a) Advantages:
• Improved (easier and quicker) communication and feedback between the government departments and citizens.
• Access to services anytime, anywhere, any place where there is Internet access.
• Easier access to up-to-date information and documents.
• Many sites and services can be accessed by smartphones.

b) Reasons:
• Large sections of the South African population do not have the knowhow to make use of these services or they do not have access to the necessary technology. This is the so-called Digital Divide.
• South African Citizens are sometimes nervous about online threats which receive a lot of publicity in the media. There are also sometimes concerns about the security, privacy and use of information.
• It is not generally possible to make all services totally electronic, so two systems need to be maintained – the traditional ‘manual’ system and the electronic ‘self-service’ system. In addition, many people prefer to deal with someone in person.