Internet and Network Technologies   
‘sub-scenario’

The organising committee wants to set up a network in the hall so that they can run Computer Literacy and Adult Basic Education courses. They have also appointed Sibu as an administrative assistant to assist Mary with the day-to-day running of the trust’s affairs. Sibu has some basic networking knowledge as she has set up a basic Home Area Network (HAN) at her family’s home.

1. Give two broad advantages of setting up a network for the trust in this specific context.

1. >>

2. Would the network in the school hall also be an example of a HAN? Briefly motivate your answer.

2. >>

3. The organising committee is considering using *crowdfunding* to finance the network. They will use the Digital Divide as a motivation.

3.1 Explain what crowdfunding is and how it works. Also mention two popular crowdfunding platforms in your answer.

3.1 >>

3.2 What is the Digital Divide?

3.2 >>

4. A choice has to be made between connecting the network using UTP cables and connecting it wirelessly.

4.1 Give two advantages of connecting the network wirelessly, in other words, by using a WLAN.

4.1 >>

4.2 Give two possible disadvantages of connecting the network wirelessly.

4.2 >>

5. A file server and a switch will need to be purchased to implement the network.

5.1 How does a *server* differ from any other computer connected to a network?   
In your answer, you should also refer to the specific role that the *file server* will play in this context.

5.1 >>

5.2 Give one way in which the hardware specifications of a file server typically differ from those of any other ‘client’ computer connected to the network.

5.2 >>

5.3 What is a switch used for in a network?

5.3 >>

6. A trust member is concerned that unauthorised users might be able to gain access to confidential data stored in the files on the network.

Name one way to prevent users gaining access to confidential files stored on the network.

6. >>

7. The trust wants to install an internet connection which all the users on the network can share.   
They need to choose an ISP and a broadband connection.

7.1 A trust member was tasked with approaching various ISPs to get quotes.

7.1.1 Explain what an ISP is by explaining its role or function in internet access.

7.1.1 >>

7.1.2 An ISP will provide wireless or wired internet access. Give three other kinds of service that an ISP will typically offer.

7.1.2 >>

7.2 All the internet packages that were researched refer to broadband. Explain what broadband is and why it is of such importance to someone using the internet.

7.2 >>

7.3 What is the main question to ask if you need to make a choice between an ADSL and a 3G/4G(LTE) internet connection?

7.3 >>

7.4 The trust finally decided on an ADSL package with the following specifications:

***4 Mbps / 512 Kbps******uncapped*** *ADSL*

***Shaped*** *for normal web browsing, email, online banking and social networking services*

*Free 5 GB* ***cloud storage*** *account*

7.4.1 Give an advantage of ADSL (other than the cost and the fact that it is a broadband connection).

7.4.1 >>

7.4.2 Give two possible benefits of using fibre compared to ADSL (other than the fact that it is ‘faster’).

7.4.2 >>

7.4.3 Why are there two different speeds given in the specifications (4 Mbps / 512 Kbps) and what would the benefit of these speeds be to the trust?

7.4.3 >>

7.4.4 What does uncapped mean in this context?

7.4.4 >>

7.4.5 What does the term ‘shaped’ mean in this context?

7.4.5. >>

7.4.6 If the package is uncapped, what would the trust have to pay for each month?

7.4.6 >>

7.4.7 Briefly explain what the ‘free 5 GB cloud storage’ refers to and give two general advantages of cloud storage.

7.4.7 >>

7.4.8 Give one example of a service or website that offers cloud storage.

7.4.8 >>

7.4.9 Explain what the difference between cloud computing and cloud storage is.

7.4.9 >>

8. The chairman of the trust normally uses an ADSL connection at home to connect to the internet. However, when travelling to Cape Town to meet potential sponsors he had to use another way of connecting to the internet.

8.1 One of the ways to connect to the internet would be to use the WiFi hotspot in the hotel. Explain what this means and refer to the concepts of *WiFi* and *hotspot* and how to use them to access the internet.

8.1 >>

8.2 Name another way in which the chairman could possibly connect to the internet from his hotel room, besides WiFi.

8.2 >>

8.3 The chairman has an integrated webcam on his laptop and wants to ‘Skype’ with one of the potential sponsors in London.

8.3.1 Skype is a form of application software. Give the general name or category of software that Skype falls under and briefly describe its function.

8.3.1 >>

8.3.2 What does it mean to ‘Skype’ someone?

8.3.2 >>

8.3.3 What does it mean when we say the webcam is *integrated*?

8.3.3 >>

8.3.4 Give one reason why it might not be a good idea to use a webcam during a ‘Skype session’.

8.3.4 >>

9. A LAN and an internet connection have been set up so that all of the computers can connect to the internet via a proxy server that was purchased for this purpose. Mary has also been tasked with finding sites with good resources that may be used in the Computer Literacy courses. She has also started to use e-banking for the trust.

9.1 Give two broad benefits or features of e-banking that are not applicable to normal, ‘conventional’ banking.

9.1 >>

9.2 Why do the websites of banks often start with ‘https’? For example, https://www.newsavingsbank.co.za.

9.2 >>

9.3 Mary found a very useful site with material that can be used under a Creative Commons agreement.

It has the following URL: www.indigonam.org.uk.

9.3.1 What is a URL? Do not just give the meaning of the abbreviation as your answer.

9.3.1 >>

9.3.2 What do we mean when we say that material can be used under a Creative Commons agreement?

9.3.2 >>

9.3.3 While viewing the above web page, Mary was asked to install a Flash plug-in.

Explain what a plug-in is and what it generally allows one to do by referring to this specific example. Also explain the difference between a *plug-in* and a *browser extension* or *add-on*.

9.3.3 >>

9.3.4 Give two things one can deduce (‘figure out’) from the URL of the website   
(www.indigonam.org.uk).

9.3.4 >>

9.3.5 Mary would like to email the webmaster of this website, but no email address is given.

Suggest an email address that she could perhaps use to contact the webmaster.

9.3.5 >>

9.3.6 Give two ways in which Mary can set the browser to ‘remember’ the name of this website so that she can easily return to it in the future.

9.3.6 >>

9.4 Sibu noticed that when she opens her web browser it goes to the CNN website. She would prefer it to go directly to a search engine like Google when she opens the browser.

9.4.1 What is the difference between a web browser and a search engine?

9.4.1 >>

9.4.2 Briefly explain how Sibu can get the web browser to always go to the search engine website when she first opens her web browser.

9.4.2 >>

9.4.3 Sibu noticed that when she and Mary go to the same news website on their individual computers, she sometimes gets an older version of the web page.

Explain why this happens by referring to the concept of web caching and how to resolve the problem when it occurs.

9.4.3 >>

10. Sibu has set up a *Gmail* account to help with the day-to-day administration of the trust.

10.1 What is the main difference between Instant Messaging (IM) systems like WhatsApp and email?

10.1 >>

10.2 One of the sponsors sent a set of zipped files to Sibu and ‘*Cc-ed’* the chairman of the trust.

10.2.1 Explain what ‘Cc’ means in this context. Do not just write the meaning of the abbreviation.

10.2.1 >>

10.2.2 What difference, if any, would it make if the sponsor ‘Bcc-ed’ the documents to the chairman as opposed to ‘Cc-ing’ him?

10.2.2 >>

10.2.3 Explain what the term *zipped* means in this context, and why the files may have been zipped.

10.2.3 >>

10.3 When Sibu needs to reply to an email message, she is not always sure whether she should use the Reply or Reply to all option.

Explain the difference between these two options.

10.3 >>

10.4 Sibu found that there is a limit to the number of recipients she can send to simultaneously. This is the email program’s way of trying to prevent spam and the solution to this problem is to use a contact group (distribution list).

10.4.1 What is spam?

10.4.1 >>

10.4.2 Give three ways to reduce the amount of spam you receive.

10.4.2 >>

10.4.3 Explain what a contact group is and how it is used.

10.4.3 >>

10.5 Sibu found that she cannot send certain types of files as attachments.

Briefly explain why this is the case.

10.5 >>

10.6 Sibu found that there is a restriction of the size of the email attachments she can send. Someone suggested that she should try using a ‘Dropbox’ type of service.

10.6.1 Briefly explain how Sibu could make a file available to others using a service like Dropbox.

10.6.1 >>

10.6.2 Give one possible disadvantage of using a service like Dropbox to share files.

10.6.2 >>

10.7 Sibu uses Gmail, which is a popular example of a web-based email system. Her email address is Sibu\_100@gmail.com.

10.7.1 Why do you think she used the username *Sibu\_100* instead of just *Sibu*?

10.7.1 >>

10.7.2 Give the main advantage of using a web-based email system as opposed to an ISP-based email system, besides any cost issues.

10.7.2 >>

10.8 One of the trust members suggested that they make use of Facebook instead of email to communicate with clients.

10.8.1 What is the general name given to services and websites such as Facebook, Pinterest and Twitter?

10.8.1 >>

10.8.2 Give two advantages of using Facebook to communicate with clients instead of using email.

10.8.2 >>

10.8.3 Give one potential disadvantage of using Facebook to communicate with clients instead of using email.

10.8.3 >>

11. The current booking system for the computer short courses simply involves the community members writing their names down in a book. A trust member proposed that the booking system should be ‘computerised’ so that the community members’ details are captured on a computer system immediately.

Give three benefits of having a computerised booking system for the computer short courses.

11. >>

12. Sibu went onto a website to book a plane ticket for one of the trust members. A message appeared saying that she has to enable *‘pop-ups’* for the website to function properly.

12.1 What is a pop-up?

12.1 >>

12.2 What is a pop-up blocker?

12.2 >>

12.3 What is the best way for Sibu to resolve this problem so she can use the website?

12.3 >>

13. Mary wants to send a picture of her daughter from her cellphone to Sibu’s cellphone by linking their cellphones on a network.

13.1 What type of network would we classify this as?

13.1 >>

13.2 What type of wireless technology would they most likely use to send the picture?

13.2 >>

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