For Grade 11 2022

PECANWOOD
COLLEGE
Prepared for Life

INFORMATION TECHNOLOGY NOV EXAM THEORY – GRADE 10

NAME: _____ **GRADE:** _____

DATE: 22 NOVEMBER 2021
MODERATOR: MR N NAINAR
EXAMINER: MR SC EILERTSEN

MARKS: 130
TIME: 2 HOURS

INSTRUCTIONS:

1. Neatly write the answers in the spaces provided.
2. It is in your own interest to write neatly with a dark coloured pen.
3. This examination is 20 pages. Ensure that your examination paper is complete.
4. There are no trick questions on this paper e.g. a comma that did not print clearly would not be the intention of any of the questions.
5. You can use a non-programmable calculator.
6. There is an additional page at the end of the examination paper if you need extra space. If you use it, please label your answer clearly using the **same numbering** as the examination paper. EG 1.2.4.3)

Section A **Short Questions** **Question 1** **Definitions**

Match column A with column B. Do this **by using the grid after** this table. Write the letter from the definition column B next to the matching term in column A. There are more definitions

Column A - Terms	Column B - Definition
1.1 Proxy server	**A.** Make use of computing services like storage, databases, software, networking etc over the Internet.
1.2 Radio-Wave transmission	**B.** A tiny portable computer chip which holds information and allows you to connect with your network. This means you can make calls, send SMS messages, and connect to mobile internet services.
1.3 Web browser	**C.** A standard that provides a unique number for every character, no matter what operating system, application, or language. See addendum A
1.4 Spyware	**D.** Software that is installed in a computer or mobile device without the user's knowledge and that transmits information about the user's activities.
1.5 Cloud computing	**E.** Software that is copyright but given away by the author. You cannot alter the application as you don't have the source code.
1.6 Unicode	**F.** Storing your files, movies, music etc on a platform like Google drive.
1.7 Product key	**G.** Free software that allows you to anonymously surf the Internet and pretend to be someone else.
1.8 Freeware	**H.** This is how radio, TV and cellular phones (WiFi and Bluetooth etc) communicate without cables.
1.9 SIM	**I.** A software program used to locate and view web pages. It processes the HTML code making up the page and renders it on the screen.
1.10 Server	**J.** A low level programming language that is very fast but is machine dependent.
	K. A powerful computer that is a node on a network – it provides various resources like network security, hardware access, disk space, printer access etc
	L. This protects your identity online by encrypting all your communications before deleting them later.
	M. A unique code that will activate a legally purchased software application.
	N. A powerful computer that is a node on a network through which all web content passes. It also improves web performance by caching web content and plays a role in network security.

1.1 _____ 1.2 _____ 1.3 _____ 1.4 _____ 1.5 _____

1.6 _____ 1.7 _____ 1.8 _____ 1.9 _____ 1.10 _____

(10)

Section B Data Representation

Question 2

2.1) Count from the number 16 to the number 21 using binary _____

_____ (3)

2.2) Count from the number 281 to the number 288 using hexadecimal _____

_____ (4)

2.3) In binary, what is the biggest number that can be represented using 5 bits? _____ (1)

2.4) How many possible combinations can there be using 8 bits? _____ (1)

2.5) Add the number 1011 1101 to 0011 1111

_____

_____

_____ (4)

[13]

Section C **Theory**

Question 3

For each of the questions below, you need to select **the most correct answer** from the options provided. Use the answer grid at the bottom of each page to record your answers.

3.1) Which part of the CPU is responsible for all logical calculations?
- a) ALU
- b) CU
- c) The registers

3.2) Primary memory is
- a) Volatile
- b) Non-volatile

3.3) Secondary memory is made up of . . .
- a) HDD
- b) SSD
- c) CD-ROM
- d) DVD
- e) External hard drive
- f) Depending on the configuration of the computer, it could be made up of all the above
- g) None of the above

3.4) The process by which data on one device is automatically updated so that it is matches the data on another device; this way **both devices** have access to the **newest version** of the data.
- a) Synchronization
- b) Volatile
- c) Non-volatile
- d) Encryption
- e) Backup

3.5) What can we expect to find on the ROM chip on a computer?
- a) Firmware
- b) Software that is stored semi permanently
- c) Permanent software which can, under certain conditions, be updated
- d) Software that is lost when the power is turned off
- e) Options a, b, c and d.
- f) Options a, b and c.
- g) Option a only.

Question	3.1	3.2	3.3	3.4	3.5
Answer					

3.6) Which software license is the operating system Linux distributed under?

a) Proprietary
b) Free and open source – General public license (GNU)
c) Creative commons
d) Freeware
e) Freemium

3.7) A device driver

a) Is part of the operating system.
b) Is software that allows the operating system to communicate with a certain piece of hardware e.g. a printer
c) Is part of the Windows operating system.
d) Is part of Office 365
e) Provides protection from malware

3.8) A virus can be best described as . . .

a) Software that is illegally loaded onto a computer that causes damage to the system
b) Software that is illegally loaded onto a computer that transmits data via the internet to the software author without the permission of the user.
c) Software that automatically displays or downloads adverts or services based on the historical activities detected in the browser history.

3.9) Android

a) Is a popular type of mobile phone.
b) Is an operating system based on Linux; it is open source but developed by Google.
c) Is a device that has a touch screen
d) Is another name for a smart phone
e) Means compatible with phones and tablets.

3.10) Where would you expect to find an SD card

a) In a camera
b) In a phone
c) In a drone
d) Any device that needs small secondary memory
e) Any device that needs small primary memory
f) Any device that needs small volatile memory

Question	**3.6**	**3.7**	**3.8**	**3.9**	**3.10**
Answer					

(10)

Section D **Internet and www**

Question 4

4.1) The difference between data and information.

The Scenario

I have a business that sells international men's and woman's fragrances online. I have two ranges for each – budget and luxury.

A) I have a **database** of 1000 people that buy from my website every month. I have their names, where they live, their gender, their date of birth, their marital status, and their profession.

B) By running several SQL queries, I discover that . . .

❶ Women under the age of 30 spend more with me in the first 15 days after receiving their salaries than other groupings. They favour the budget ranges.

❷ By contrast I find that single men over the age of 45 spend more later in the month but confine their purchases to the more luxury ranges.

Using the examples above (A and B) explain which is an example of "data" and which is an example of "information". _____

_____

_____

_____

_____ (4)

4.2. **Using the question 4.1 A and B, above** what clever marketing strategy could I implement on my online fragrance website to increase sales and profit?

_____

_____

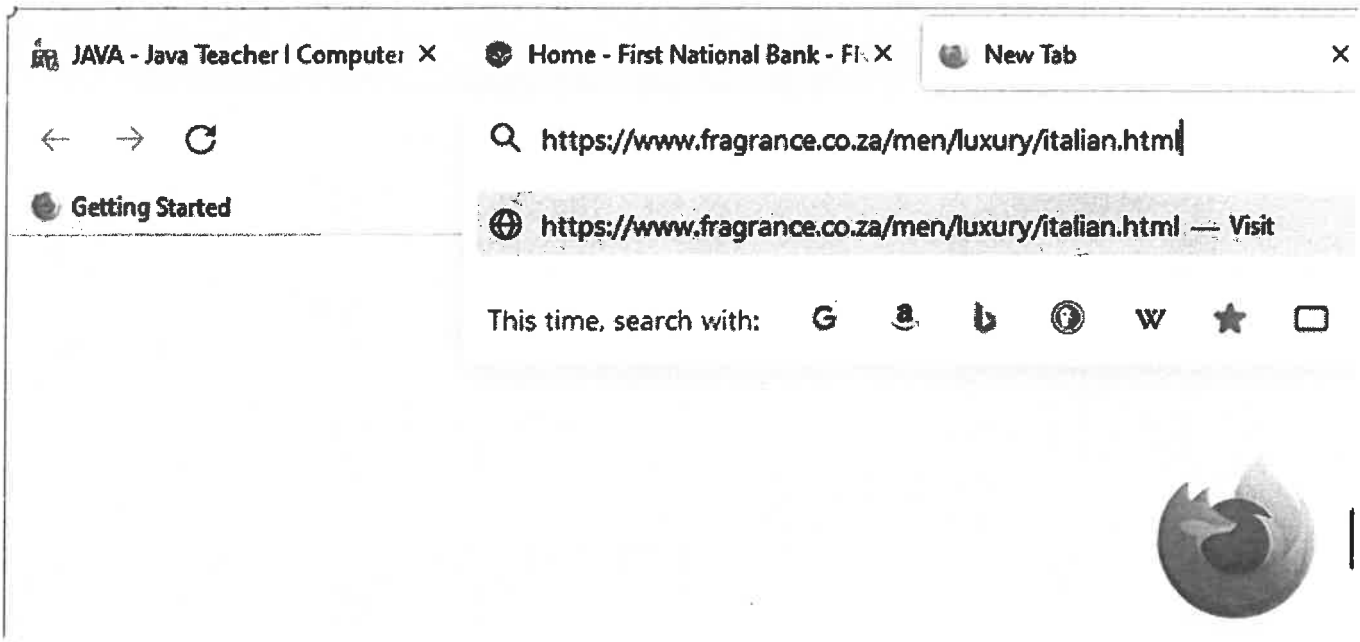
_____

_____

_____ (3)

4.3) What general term do we give to websites that sell online? _____ (1)
(an "online shop" is not the answer)

4.4) Study the screenshot below and answer the questions that follow.



4.1) What is the current URL I am about to visit?

_____ (2)

4.4.2) As in your PAT in grade 12, thought, planning and structure are very important. Looking at the complete URL above and considering the scenario, would you say that the URL demonstrates "careful planning" or "a lack of planning". Explain your answer.

_____

_____

_____ (2)

4.4.3) Which protocol is being used to access this resource? _____ (1)

4.4) What does "www" stand for? _____ (1)

4.4.5) What is the domain name? _____ (1)

4.4.6) In which country is the server that hosts the website? _____ (1)

4.4.7) What is the **path** to the resource that I am interested in?

_____ (2)

4.4.8) Which web browser is being used in the screen shot? _____ (1)

4.4.9) Identify (name) in order from left to right, the six avatars (little logos) after the words "This time, search with:"

_____ (3)

4.5) I want to see what my competitors are charging for a particular product, so I go to Google Search to find out.

- The product must be - perfume
- The product must be – Versace
- The product must be – Bright Crystal
- The product must **not** be – mini (I do not want to view the mini size)

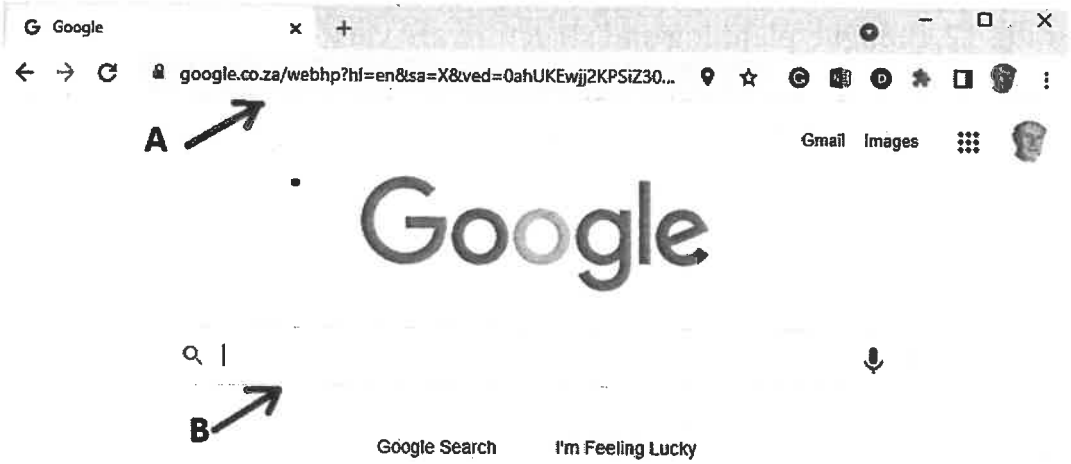
What would I type into the Google search bar to get the best results?

(Answer in the space below)

_____

_____ (4)

4.6) Study the screen shot below and answer the question that follows



4.6.1) What is the difference between the area indicated by A and the area indicate by B? Expla.. fully. Note mark allocation.

_____

_____

_____

_____

_____ (4)

4.7) Read the article (Addendum B) that defines "Instant Messaging". Would you describe WhatsApp as an Instant Messaging service? Explain your viewpoint in full.

_____

_____

_____

_____

_____ (4)

Section E **Application. Assumption: We are using Ms Access**

Question 5

5.1) I have a database for the clients that buy from my online fragrance shop. Carefully re-read the **scenario** in question 4. Now design a one table database that would match the scenario. Use the table below (you are creating a **schema**)– you do not have to use all the lines provided but do note the mark allocation.

(12 marks)

Name of your database:		
Name of your table:		
Field Name	**Datatype**	**Description of the type of data the field holds.**

5.2) Write out the SQL query to insert a new record into the database schema described above

_____

_____

_____ (4)

5.3) In a database, describe the difference between a record and a field. _____

_____

_____

_____

_____ (4)

5.4) In a database table what is the role of the primary key? _____

_____

_____

_____ (2)

5.5) Why is it better to use the datatype "text" when you want to store a mobile phone number?

_____

_____

_____ (2)

Section F **Networking** **Question 6**

Match column A with column B. Do this **by using the grid after** this table. Write the letter from the definition column B next to the matching term in column A. There are more definitions.

Column A - Terms	Column B - Definition
6.1 LAN	**A.** A computer on a network designed to be used as the central controlling device that offers services and resources to client computers.
6.2 server	**B.** A type of bounded media made up of pairs of copper wires twisted together.
6.3 router	**C.** A _____ exists where a user transfers data and synchronizes data between cell phone, laptop, camera, printer, and wearable devices.
6.4 stand-alone computer	**D.** A device connected to a network or even to the Internet.
6.5 WAN	**E.** The term we used when referring to a high-speed cable, usually fibre optic, that connects LANs togethe
6.6 node	**F.** Local area network, usually in a single building or a few buildings that are close together. The nodes are generally connected by bounded media.
6.7 client computer	**G.** Cable made from plastic or glass that can be used to network computers together or even LANs together.
6.8 firewall	**H.** A network that effectively spans a whole country.
6.9 switch	**I.** A computer not connected to any other electronic device.
6.10 UTP	**J.** A computer on a network that receives services or can access resources provided by a central server.
	K. A system of software or hardware, or both, that prevents unauthorized access to or from a private network.
	L. Connects nodes to a network.
	M. A dedicated computer whose only job is to receive print jobs and if the permissions allow, send the print job onto the printer.
	N. An electronic device that joins computer networks together using either wired or wireless connections.

6.1 _____ 6.2 _____

6.3 _____ 6.4 _____

6.5 _____ 6.6 _____

6.7 _____ 6.8 _____

6.9 _____ 6.10 _____ (10)

6.11) Study the two diagrams in **Addendum A.** (Section F. Question 6 Networking. Diagram A and Diagram B)

The setup in Diagram A offers advantages and disadvantages. The same for Diagram B. Discuss in detail the advantages and disadvantages of each setup with regard to the placement of the server. In your answer try to include the following concepts . . .

Backups, scalability, cost (salaries, hardware and software), reliability, ownership, security, risk, productivity, convenience

(8)

6.12) **A network** application is designed to run on multiple computers that are connected via a network, often the Internet. Explain what is meant by a "**client-server network.**" Include in your answer where the data is likely to be stored – **locally** or **remotely.**

(4)

6.13) Networking offers many advantages to an organization e.g. file sharing, collaboration, printer sharing, centralization of data, and productivity to mention a few.

Sharing a file (or folder) is a common activity within an organization. You have a lot of control **how** you share your file i.e. the rights and permissions that you grant the people that you share the file with.

Make a study of **Addendum A - (Section F. Question 6. Diagram C and Diagram D)**
In both diagrams I am going to share the file called "ASCII table.docx" by sending them a link to my file. The conditions under which I share the document are not the same however. Explain where the **sharing permissions are the same** and where the **sharing permissions are different**.

In these ways the sharing permissions are the same	**In these ways the sharing permissions are different**
2 marks	2 marks

[26]

Section G Solution development

Question 7

Consider the code snippet in each case and then answer the question that follows directly beneath it. In some cases, only part of the class is shown to save space – these "missing" lines are never part of the question.

```
 6    int a = 5, b = 10, c = 15, d = 20;
 7
 8    c = a + b;
 9    c = c + b;
10    c = (c / d) + c;
11
12    System.out.println(c + " " + d);
```

7.1) What is the output of line 12 **above**? _____ (3)

```
 6    int a = 5, b = 10, c = 15, d = 20;
 7
 8    c = a + b;
 9    c = c + b;
10    c = (d / c) + c;
11
12    System.out.println(c + " " + d);
```

7.2) What is the output of line 12 **above**? _____ (2)

```
 6    int a = 5, b = 10, c = 15, d = 20;
 7
 8    c = 2a + 3b;
 9    System.out.println(c);
```

7.3) What is the output of the code above? _____ (2)

```
 6    double myRandom = 0.0;
 7    myRandom = (int)Math.random();
 8
 9    System.out.println(myRandom);
```

7.4) Why will the output of line 9 above be? _____ (2)

```
 6    int a = 5, b = 10, c = 20;
 7    int d = 0;
 8
 9    d = a + c % b;
10
11    System.out.println(d);
```

7.5) What will the output of line 11 above be? _____ (3)

```
6     int i, j;
7     for( i = 0, j = 10; i < 5; i++, j--) { };
8
9     System.out.println("Value of i is " + i + " Value of j is " + j);
```

7.6) Yes, the code compiles and runs. What will the output of line 9 above be?

_____ (4)

[16]

Grand total: 130 marks

Additional Paper: Please label your answers clearly

Addendum A

Section A. Question 1				
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	U+3048	U+FF13	U+127F	U+0E25
	⬇	⁉	£	尸
	U+2B07	U+203D	U+00A3	U+5C38

Section F. Question 6. Networking

Question 6.11)

Diagram A

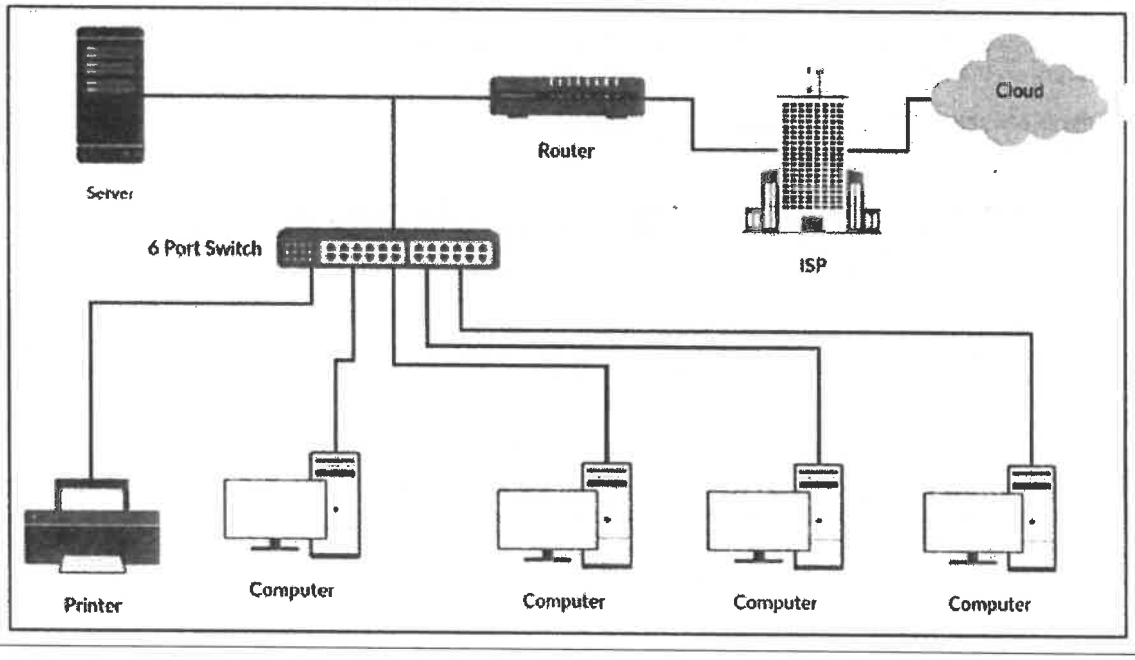
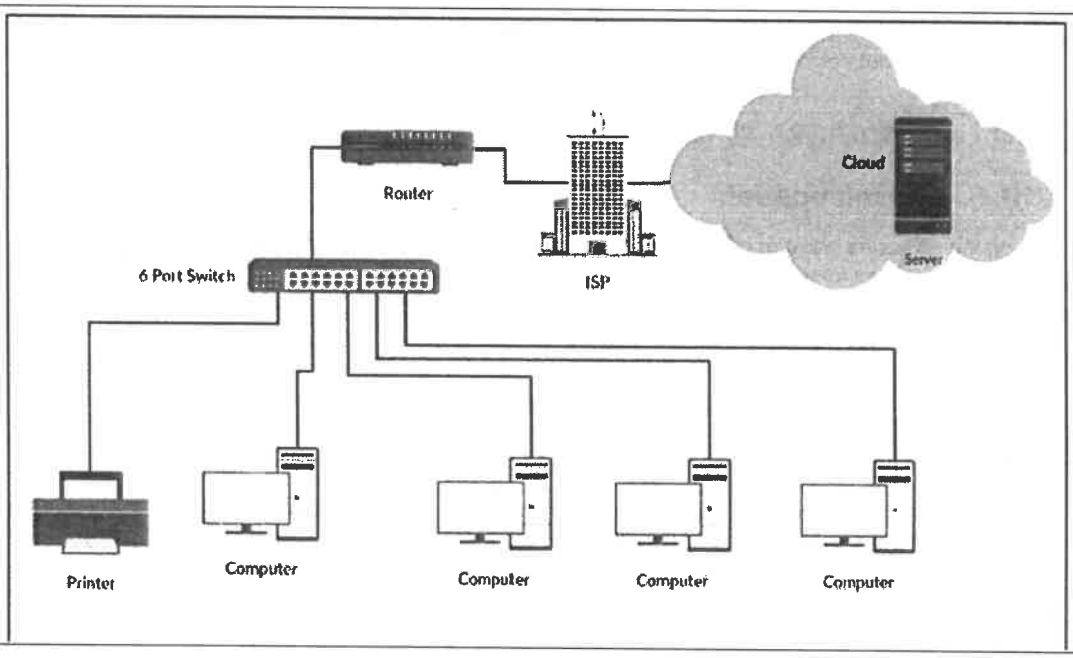


Diagram B



Addendum A continued

Section F. Question 6. Networking continued

Question 6.12)

Diagram C

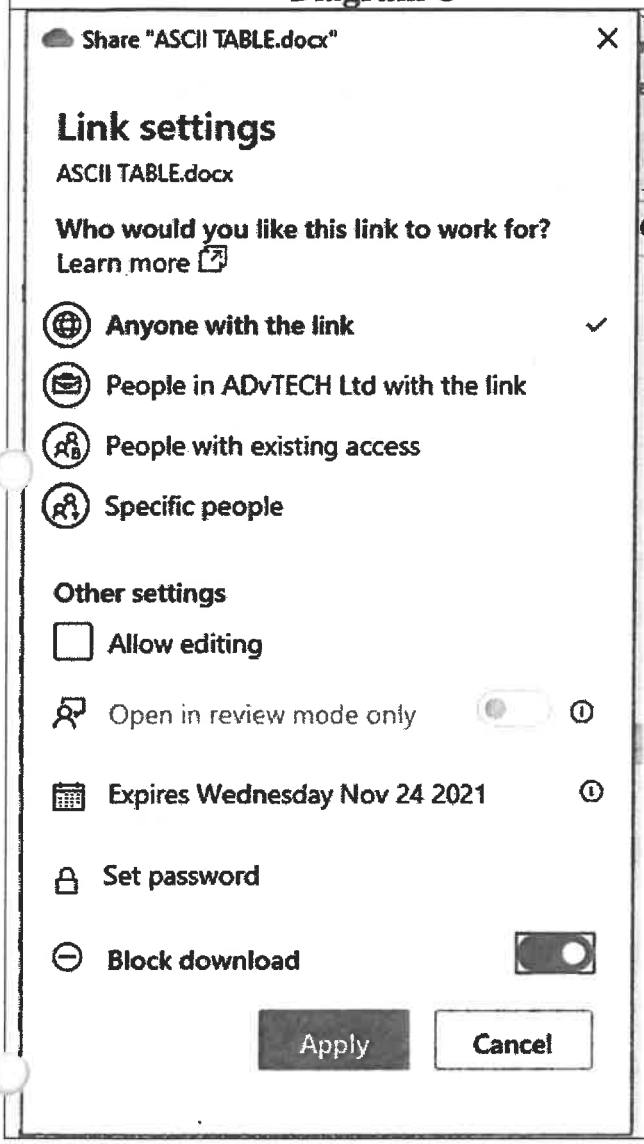
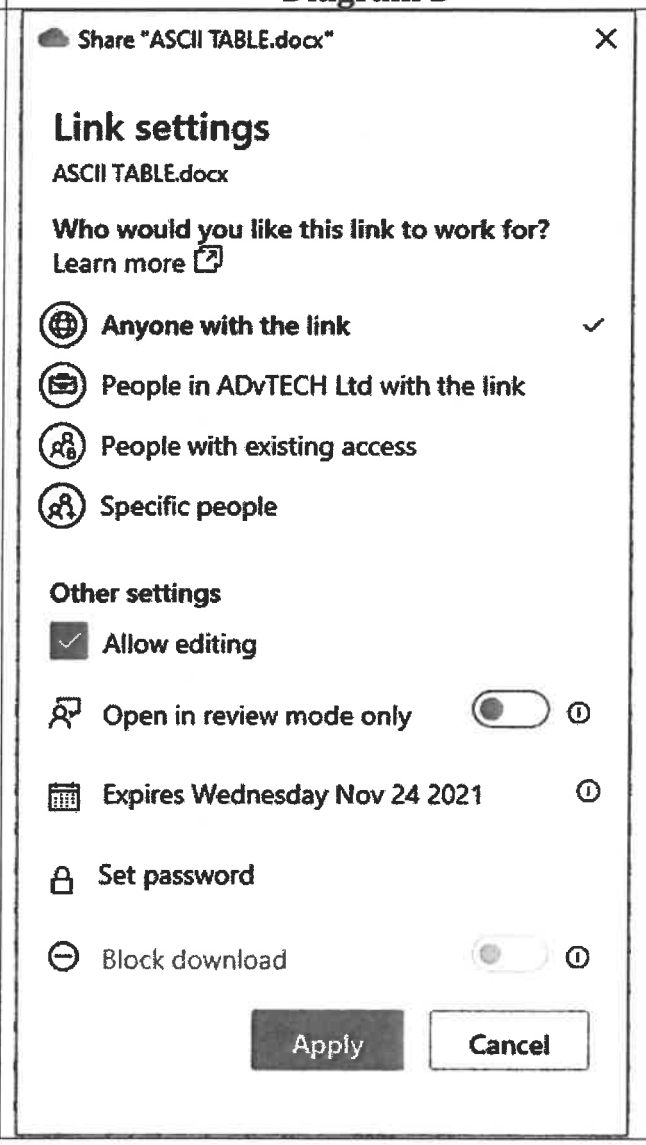


Diagram D



Instant Messaging

• Categorized under Communication,Technology | Difference Between Email And IM

IM is short for Instant Messaging. Instant Messaging enables online real time communication between two users logged in simultaneously. Every time a user presses enter the message gets broken up in packets and is immediately transmitted over the net. These packets are received on the other ended, decoded and displayed on the recipients screen.

IM requires the user to be logged into the internet server and use the same application like the msn, gtalk, skype, etc. Secondly the users need to be online at the same time. With people in different time zones this becomes very difficult.

IMs nowadays allow you to transfer unlimited data between the users and some IMs also allow you engage in audio chats making the users talk just as they would over the telephone. This service generally uses Voice Over Internet Protocol (VOIP).

Summary

1.IM is short for Instant Messaging and needs the users to be logged in to the same server. Messages are delivered instantly.

2.IM requires the users to use the same client.

3.IM the messages are displayed on the recipient's computer instantly.

Souce: http://www.differencebetween.net/technology/difference-between-email-and-in...