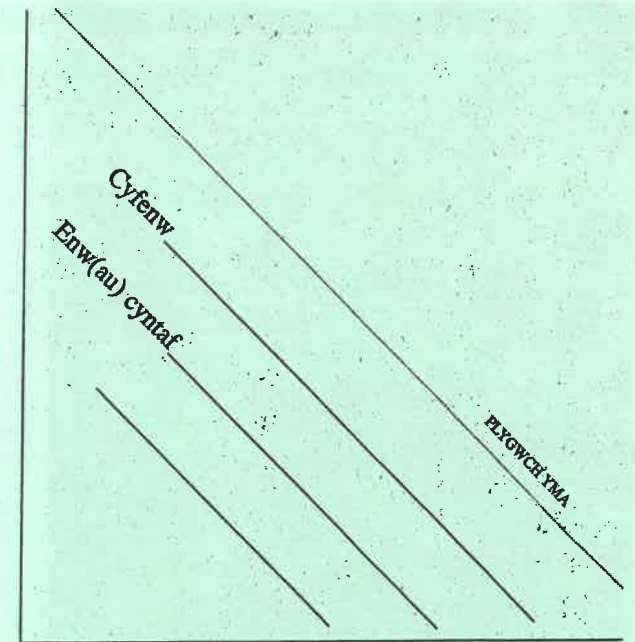
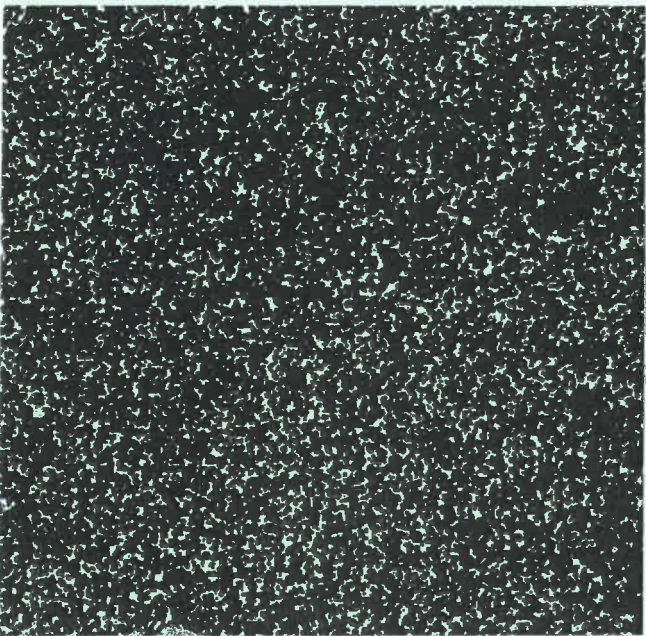
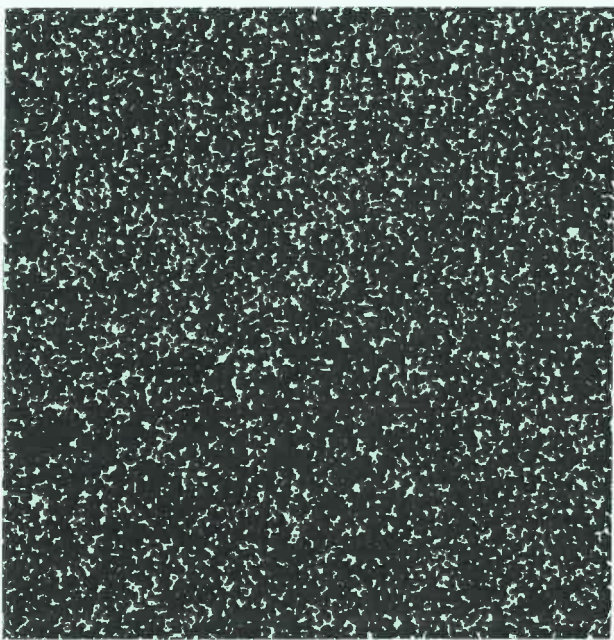






Question 1:

231

128 64 32 16 8 4 2 1
1 1 1 0 0 1 1 1

$$231 = 11100111_2$$

98

128 64 32 16 8 4 2 1
0 1 1 0 0 0 1 0

$$98 = 01100010_2$$

61

128 64 32 16 8 4 2 1
1 1 1 0 0 0 1 1

$$128 + 64 + 32 + 16 + 1 = 241_{10}$$

11
01010101

128 64 32 16 8 4 2 1
0 1 0 1 0 1 0 1
 $64 + 16 + 4 + 1 = 85_{10}$

2

2

2

2

c!) 7F

8 4 2 1
0 1 1 1
A = 10 F = 15

7F = 01111111 * base 10

!!) BD

8 4 2 1
1 0 1 1
A = 10 B = 11 C = 12 D = 13

B D = 10111101 base 10

d!) A5

8 4 2 1
1 0 1 0
B binary = 10100101

B binary = 10100101

128 64 32 16 8 4 2 1
1 0 0 1 0 0 1
A5 = 165

10100101 = 165
128 + 32 + 4 + 1 = 165

A5 = 165

!!) 3F

8 4 2 1
0 0 1 1
B binary = 00111111

B binary = 00111111

128 64 32 16 8 4 2 1
0 0 1 1 1 1 1 1
32 + 16 + 8 + 4 + 2 + 1 = 63

3F = 63

2/

2/

2/

2/

e)

16	8	4	2	1
0	1	1	1	1
0	1	1	1	1
0	1	1	1	1
0	1	1	1	1

$16 \div 5 = 32 \text{ values}$

f) $1920 \times 1080 = 2073600$
 $2073600 \times 32 = 66355200 \text{ bits}$

g) $66355200 \div 20 = 3317760$

!!!

g!)

h) ~~700 MB~~ A round 700 MB

i) A round 1400 MB

i) The Address Bus would be the part of the system which handles both the MAC Address (unique devices) and the IP Address (unique to the network).

ii) The Control Bus would be part of the system which handles the different usable parts of the system. An example of this would be for utilising the RAM as it is required for recently used software.

iii) The Data Bus would be used in the system to handle any data which could be ~~inputted or output~~ used for input or output usage. An example of this would be for ~~launch~~ launch the system's OS from the ROM.

b) Out of the buses used in the system, the bi-directional buses would be the Data Bus and the Control Bus since the Data Bus can input data into and out of the system and the Control Bus is capable of ~~receiving~~ receiving inputs from an external device and for output from into the system.

c) There are a variety of advantages and disadvantages of using a USB (Universal Serial Bus).

Advantages:

USB devices can be used on any device which has USB ports and can allow the usage of input devices (mouse and keyboard) as well as storage devices such as a flash drive or external hard drive.

A another step the user should take would be to install a signal for their network which can help protect the ~~network~~ ~~for~~ network from hackers trying to compromise their ~~own~~ way into the network.

TCP/IP v4 would be used to provide address on the network their own unique IP addresses for the network. The IP addresses for TCP/IP v4 would be shorter than the improved TCP/IP v6 which isn't as secure as the ~~IP~~ V6 but ~~still~~ still guarantees the same ~~way~~ way.

DHCP would be used in a ~~network~~ network to provide each device their own unique IP address for the device and protects the IP from being copied. This would be crucial for the network as it protects the network from anyone who is trying to imitate an IP which is allowed on the network. This would prevent unauthorised devices from accessing the network.

~~USB flash drives are not~~
 USB storage devices such as a flash drive or external hard drives are capable of storing the exact same files as a PPC.

USB devices are also very mobile which makes transporting them much easier to do, this would ~~also~~ also be as a result of them being small and lightweight therefore ~~making~~ making them easy to move. Most USB devices can be modified to an extent, an example of this would be changing the speed of your mouse.

Readme: OSB devices, mainly flash drives don't last for more than a year as they are overused and plugging it into a PC port too many times causing wear and tear.

USB storage devices are limited to their intended storage amount, meaning that you can't upgrade the storage.

15B Alarms are very easy to damage which may be crippling ~~the data~~ depending on the device, without the usage of a keyboard you would be unable to type, 0 - is a storage device was to be damaged then the data would either be lost or expensive to repair.

3a) Considering the scenario the user is in, they are having problems relating to the usage of photoshop + via the Cloud Edition. The first recommendation I would make, would be to upgrade their processor from an i3 to an i4 or i5 processor as they can use more than 3.30 GHz worth of data therefore allowing the system to run faster.

I would also recommend upgrading their RAM so that their system can load their projects recently used projects on photoshop faster since there's more RAM to store the data.

The main recommendation I would suggest would be to upgrade their OS from windows 10 32 bit to windows 10 64 bit to match their x64-based processor which will resolve any compatibility issues.

Virtual memory would be utilized by components such as RAM or ROM to contain data about software that is used on the system such as any updates to software or what time to update the OS.

!!) A page fault would be an error caused by missing specific data for the page to load.

!!!) Disk Trashing would be a term used to describe internally damaging a hard disk, this can be caused by the disk being overused.

c)

Task manager would be used in an OS to be able to run multiple pieces of software at the same time, it can also be used to go into more advanced information regarding the software and hardware in the system, this would include being able to check the specifications of the system.

4c)

I have a number of steps that the user must take in order to ensure that they can be safe at home.

One step that I would recommend would be to use wired connection such as an ethernet cable rather than the wireless connection. This would prevent the risk of external threats from remotely accessing the network.

A further step to take would be to ensure that every device that uses the network is connected to a VPN (Virtual Private Network) which is used to mask your location and IP address to make it much harder for hackers to track your location and from revealing any sensitive data.

A further step the user should take would be to install anti-virus software to reduce the risk of external threats from causing damage to the network or devices.

4

4

2