Section A (20%)

Answer any ten questions. All questions carry equal marks (2 marks each). If you answer more than ten questions the best ten marks will be chosen.

1. Write these file sizes in *increasing* order:

   84K 200Bytes 9GB 299MB

   200Bytes 84K 299MB 9GB

2. What is a **GPU** and what does it do?

GPU=Graphics Processing Unit, processes graphical instructions, relieving CPU from doing that.

3. Convert the binary value **1100 0101** into decimal.

197=128 + 64 + 0 + 0 + 0 + 4 + 0 + 1

2. What is the difference between **HTTP** and **HTTPS**?

HTTP=Hypertext Transfer Protocol; HTTPS is same but S=Secure; difference important because data is encrypted with FTPS.

3. What is the difference between primary and secondary memory, and what is each used for?

Primary (RAM) used to run programs when computer is turned on, secondary (disk) used to stored data when computer turned off, or when data/programs not needed in RAM

3. What is the Unix command to remove a directory?

rm

4. What do the letters **CMYK** stand for?

CYMK=**C**yan, **M**agenta, **Y**ellow, blac**K** – common colours used in printing

5. List two disadvantages of email over traditional mail.

Cannot transmit physical objects, inherently insecure.

6. List 4 provisions of the Data Protection Act.

Suggested 4 provisions include: right to data security, right to view data, right to amendment if data wrong, data only used for purpose obtained

7. Define the terms LAN and WAN giving one example of each.

LAN=Local area network, WAN=wide area network, LAN example is ordinary household or workplace network, WAN example is internet

8. List the three main types of printers, giving one advantage and one disadvantage of each.

Types: Inkjet, (inexpensive to bus/expensive to run) Laser (expensive to buy/inexpensive to run), impact (can print multi-part stationary/noisy);

9. Who is the Windows™ super-user?

Windows super-user is administrator

Section B (20%)

*Answer any **two** questions. All questions carry equal marks (10 marks each). If you answer more than two questions the best two marks will be chosen.*

1. Outline the steps to connect an office to the Internet:

a) Outline at least two connection methods available to businesses.

Eg broadband, dialup,

b) Discuss the advantages/disadvantages of each.

Broadband: fast inexpensive, always on, but means security a consideration

Dialup: expensive over time, slower, dialup takes time, disconnected when not dialed-up.

c) List the hardware details for each connection type.

Broadband 'modem', cable or existing phone line with 'splitter', router

Dialup modem, phone line

d) Discuss the software requirements of an internet-attached computer: what software protocols need to be added? Which user applications are most commonly required and what issues arise from their use?

Software requirements start with TCP/IP as networking protocol, continue with web-browser, email client, firewall, anti-virus (for Windows). Learner should mention net-etiquette in email.

e) Name at least two general security issues and how they can be overcome.

Learner should name at minimum, viruses/trojans, password security.

10 marks (5 x 2 marks each)

2. (a) List the main components you would expect to find in a desktop computer, including 2 peripherals. Write a note on each to explain its function, and if necessary, an example of its use. Not less than 6 items should be listed.

Learner should list and then discuss components in a computer, explaining the function of each one, and considerations when purchasing;

eg. Hard-drive: consider cost vs capacity, as well as speed of operation and likelihood of becoming full; used to store documents, images, audio etc; essential for all operations of the computer, with significant impact on system performance as it can be used for virtual memory, as well as for secondary storage.

Other components include CPU, RAM, Monitor, DVD-ROM, Graphics Card etc.

Peripherals include printer, scanner, mouse etc.

6 marks

(b) Is the processor speed of the CPU alone a good indicator of system performance? If not, what else could be an indicator of performance and why?

No, as CPU not only factor affecting performance. Learner should mention at least 1 other item contributing to performance, eg RAM (more is faster), Disk (more free space, with less fragmentation is faster)

4 marks

3. (a) List 4 common functions of an operating system. Discuss two of these in detail explaining how each function is achieved and the benefit to the end user.

Resource accounting: allow user to see how much disk/RAM in use, what programs hog CPU etc.

Security: control access to files, features by password

Process control: allow for termination of misbehaving programs

Hardware drivers: allow programs to use hardware more easily, by providing a pre-written software interface.

8 marks

(b) Many applications are developed under the Open Source model. List two which are available both for Linux and Microsoft Windows, and with which you are familiar; then discuss them under the headings of:

- Benefit to an organisation of the software
- Features and functions

Learner may list any two software packages, including ones already mentioned in part (a), as long as both are available for Linux/Windows. Eg, FileZIlla, LibreOffice, kwrite (plain text editor), GIMP (image editor). Benefits include lower cost of ownership, ability to change and improve the applications.

2 marks