The operating system controls the scheduling of processes.

Describe how the operating system uses scheduling to allocate processor time.

(4)

Some users are given administrator privileges.

Explain **one** way an operating system allows an administrator to manage users.

(2)

Identify an additional piece of software that is required for the operating system to manage peripherals.

(1)

A   Analogue to digital converter **B**   Assembler **C**   Device driver **D**   Disk defragmenter

One function of utility software is to provide anti-malware.

State **two other** functions of utility software.

(2)

Identify **two** reasons for using data compression.

(2)

A   Reduces data transfer times   **B**   Reduces disk fragmentation
C   Reduces required storage space
D   Reduces the chance of data being hacked   **E**   Reduces the need for error detection and correction

Describe two different types of user accounts typically found in modern operating systems   (2)

Describe how the operating system uses paging algorithms for memory management?   (4)

Q1 - see below

ANSWERS

1. One way an operating system allows an administrator to manage users is through the creation and deletion of user accounts. Administrators can use various tools provided by the operating system to add new users, set up their permissions, and remove users when they no longer need access.
   Other answers:
   Setting Permissions: Administrators can assign different levels of permissions to user accounts, setting what files and applications a user can access and modify. This includes read, write, and execute permissions.
   Account Types: Besides standard and admin accounts, there may be other account types like guest accounts, which have very limited access
   Password Policies: Administrators can set up password policies that require users to create strong passwords and change them regularly to enhance security.
   Audit Logs: Operating systems maintain logs of user activities, which administrators can review to monitor for any unusual or unauthorized actions

2. C – The role of a **device driver** is to allow communication between the hardware and software, allowing the operating system to send instructions to hardware devices (peripherals) and receive data from them.

3. **ABCDEF**! Anti-malware, Backup, Compression, Defragmentation, Encryption, File Repair
   File repair utility software is designed to detect and correct errors in files helping to prevent loss of data.
   Encryption software is designed to secure digital data by encoding it into an unreadable format, which can only be decoded with the correct key

4. **A and C**

5. **See the answer to question 1.** Admin accounts, standard user accounts, guest accounts

6. **Paging algorithms** are used by the OS for memory management. They let the operating system use a section of the hard drive, called virtual memory, as if it were additional RAM. This way, even if the physical RAM is full, the computer can keep running more programs by moving some data to this virtual memory. When a program needs data that's not in the physical RAM, the operating system swaps it in from the virtual memory, making sure the program can access it as if it were in RAM all along

7.

Q1 answer:An operating system uses scheduling algorithms to share out processing time between open programs. Different programs waiting for the CPU form queues. The operating system decides which program gets the CPU next based on rules like importance or waiting time. By efficiently switching between programs, the OS keeps everything running smoothly, giving the illusion of multitasking.