# Homework 2 Functions of an operating system Answers

1. The operating system can be described as *“a bridge between the user and the hardware.”*

 What is meant by this? [4]

* The software is used to take on the function of the hardware
* The complexities of operation are hidden from the user
* In some cases, software may be used to emulate a different architecture
* The operating system provides users with access to its functions via **Application Program Interfaces (APIs)**

2. Name and briefly describe **four** functions of an operating system. [12]

**Memory management**

 OS allocates memory to each running process

 Keeps track of where each process is loaded

 Keeps track of “virtual memory” – ie. swaps programs/parts of programs out of memory onto hard disk if not enough space in RAM

**Backing store management**

 Keeps an index of where each file/block is stored

 Keeps a record of where there is free space

 Allows users via API to move, copy, delete files, create folders etc

 Holds access rights to each file, e.g. read-only, no access, etc to prevent unauthorised access/modifications

**Processor scheduling**

 Runs a scheduling algorithm

 Makes optimal use of processor time

 Gives each process a small time slice before moving to next running process

**Peripheral management of IO devices**

 Communicates with I/O devices via I/O controller

 Checks that I/O device such as printer is ready to receive data

 Deals with interrupts such as “Out of paper”

 (1 mark for naming function, 1 mark for each description of task, max 2)

 [Total 16 Marks]