1994 Paper 2 Question 11

You are in charge of the design of both hardware and software for a new (but fairly conventional) workstation which will have its peripherals (for example a disc drive and a printer) directly connected to it. Your workstation will be required to support an operating system that allows its user(s) to run several independent programs at once.

Explain and justify the method that you will provide for an application program to gain access to kernel services and physical input/output devices.   [12 marks]

For both a printer and a disc drive, indicate additional functions (beyond those provided by the physical device itself) that an operating system typically provides in software.   [8 marks]