

I/O Mechanisms Test

1. Explain memory-mapped I/O. ----- [3]
2. Discuss the advantages and disadvantages of memory-mapping as a mechanism for I/O. ----- [2]
3. Explain the concept of polling. ----- [2]
4. Contrast busy-wait and interleaved polling. Your answer should use labelled diagrams where appropriate. ---- [4]
5. Discuss the advantages and disadvantages of polling, providing at least two disadvantages. [3]
6. Explain, using appropriate diagrams, how interrupts can be used to provide asynchronous I/O. ----- [5]
7. Explain context switching. ----- [4]
8. Discuss the advantages and disadvantages of interrupts as a mechanism for I/O. ----- [8]
9. Contrast the suitability of polling and interrupt-driven I/O for use in an embedded system of your choice. Your answer should state any assumptions clearly.----- [5]
10. Explain Direct Memory Access (DMA). Your answer should give an example of where DMA would be a suitable choice as an I/O mechanism. ----- [5]

Answers: See lecture slides.