

Question 1: Separation For each of the following, determine which type of separation is exemplified. Options are: physical, temporal, logical, or cryptographic.

1.1. Memory fence

1.2. Many programs executing on a single processor

1.3. The code and data from one browser tab is kept separate from the code and data of another browser tab

1.4. I publish the spreadsheet of names and grades, but each line is encrypted under the particular students' public key

Question 2: Responsibilities of the OS What are the 5 main responsibilities of the OS?

Question 3: Memory Separation Which of the following best describe the base-bounds and segmented memory protection mechanisms?

- ☐ Hardware provides cryptographic separation between processes
- ☐ Hardware and the operating system work together to protect a process from stack smashing and related attacks
- ☐ Hardware and the operating system work together to protect the memory of one process from access by another process
- ☐ A process enforces its own isolation mechanism, protecting its memory from access by processes

Question 4: Secure Design Principles 4.1. At company X two engineers from separate groups must review any code before it can be approved for commit. This is an example of which security principle?

4.2. A shared memory cache on a processor is a violation of which security principle?

4.3. A time of check to time of use vulnerability results from a violation of which security principle?