

Student Name: \_\_\_\_\_ Student ID # \_\_\_\_\_

**UOSA Statement of Academic Integrity**

*On my honor I affirm that I have neither given nor received inappropriate aid in the completion of this exercise.*

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Question 1:** Binary I/O (10 points)

List and *explain* two reasons for using `close()`.

Your reasons may apply to closing an input stream, closing an output stream, or closing both. If a reason of yours applies to only input or output, you should mention that and *explain* why that reason does not apply to both.

A. Reason one.

B. Reason two.

**Question 2:** More Binary I/O (10 points)

Is using binary I/O more efficient than, less efficient than, or equally as efficient as using text I/O.  
*Explain* your answer.

**Question 3:** Multithreading (10 points)

List and *explain* a case in which Java will implicitly provide you with an additional thread. That is, list and *explain* a case in which Java will add an additional thread to the process running your code *without* you needing to explicitly create and start a new thread using calls such as `Thread threadname = new Thread(taskname);` and `threadname.start();`.

**Question 4:** More Multithreading (10 points)

Which of the three thread models we discussed in class (Boss/Worker, Work Crew, and Pipelining) is realized by Java Thread Pools? *Explain* your answer.

**Question 5:** Networking (10 points)

Networking code often makes heavy use of exception handling. *Explain* why that is.

**Question 6:** More Networking (10 points)

Networking code often makes heavy use of multithreading. *Explain* why that is.

**Question 7:** Advanced GUI Programming (20 points)

A. What does it mean for a GUI component to be 'modal'?

B. List and *explain* one specific example of when you would want a GUI component to be modal.

C. List and *explain* one specific example of when you would *not* want a GUI component to be modal.



**Question 8:** Ethics (20 points)

Marco watches a streaming video of a network television show on his computer. The streaming video is provided by the television network itself on the network's website. Marco really enjoys the show and knows he'll want to watch it again later. He is worried, though, that the network will remove the video from its website sooner or later, so Marco decides to save a copy of the video. However, he finds that he cannot simply click (or right click or left click or control click, etc.) on the video to save it, only to watch it again.

Nevertheless, Marco is determined and not about to give up. He searches the web and finds a free piece of software that he can download and install on his computer that will allow him to save this streaming video to a file on his hard disk, which he does.

A couple of months later, Marco has some friends over and he mentions the video to them. They ask to see it and Marco agrees. After they watch the video, one of his friends asks Marco for a copy. Marco agrees again and burns a DVD of the show for his friend.

A. Find at least one ethical principle from a professional code of ethics that is relevant to this scenario. List the principle and *explain* why you think it is relevant.

B. Say whether you think Marco abided by the principle you listed and *explain* how you came to that conclusion.

C. Give one likely motivation for Marco's action and *explain* how you concluded that was a likely motivation.

D. *Explain* a strategy that Marco could use to improve his ethical decision making.