Challenge Questions 3-2

1- Challenge Question One: What are the benefits and the disadvantages of each of the following? Consider both the system level and the programmer level.

A. Synchronous and asynchronous communication – Refers to the communication which is of both sides of the sender. The send and the receiver make sure that the communication is from both sides. A disadvantage of this communication is that it does not require both sides be synchronized.

B. Automatic and explicit buffering- The length of the queue is provided while automatic buffering in the queue needs to be infinite. In automatic buffering there is no need to block the sender while copying the message.

C. Send by copy and send by reference- A disadvantage of send by copy is that the receiver is not able to change the state of parameter while send by reference allows it too. The advantage is that send by reference method is it allows you to change a centralized application to its distributed version.

D. Fixed-sized and variable-sized messages – In a fixed size messaging refers to the buffer size. It means only a specific number of messages can be supported by the buffer size. A disadvantage is that they must be a part of fixed size. An advantage is that the size of message length of message is a variable that is fixed. The buffer length is always unknown, and the shared memory is being used by the variable size.

2-Challenge Question Two: Which of the following components of program state are shared across threads in a multithreaded process?

A. Register values -

B. Heap memory -

C. Global variables-

D. Stack memory -

3- Challenge Question Three: Can a multithreaded solution using multiple user-level threads achieve better performance on a multiprocessor system than on a single-processor system? Explain