BOOKWORK 4

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QUESTION 1

The goal of the layered protocol design is to hide the complexity as you move up the model. Therefore, the model divides the problem into manageable pieces, solving each piece on its own. Using a single header will place a lot of complexity on the application developer and increase the possible error in the software. More importantly, we will break the model of layered protocol. Referring to the efficiency, I do not believe that using single or multiple headers affects the performance but rather the additional overhead by encoding and decoding the different headers at each layer. Furthermore, you will create fixed endpoint not is not easy changeable.

QUESTION 2

If call by reference is used, the compiler pass a pointer the variable. Therefore, if the incr(i,i) is called the first parameter will be increased by 1, which point to the var from the callers frame. Now when the second parameter is increased by another 1 the same variable is increased. Hence, once the incr returns the variable will be increased by two.

Example 1

```
int i = 0;
incr(i,i);
// i = 2
```

However if the variable is by copy/restore, the variable i will copied twice one for each parameter. The first and the second variable will be increased to 1. Once the procedure return the last parameter will over right the caller i variable. Therefore i will be 1. Variable too.

Example 2

```
int i = 0;
incr(i,i);
// i = 1
```

QUESTION 3

A major problem is for all parties to agree on how the communication paths will send out information. Human intervened is often required to manage the process and because the is de facto standard ISP is reluctant to support multicasting.

Other problems with multicasting: standards congestion control reliable multicasting support increase in network traffic Not good two way communication channels

QUESTION 4

The best-suited place to add automatic routing capabilities is to expand the channel control function to forward any new connections to a centralized component capturing all the end-point. The centralized component can create a routing table using different algorithms that best suites the network overlay. The newly created

routing tables can then be sent to each queue manager.