Question 1

With a centralized directory, one server contains all data that is shared on a P2P sharing architecture. When a client needs to access data on said network, the client can send a request for the data with its information. The server then goes through it’s directory to find the file, then using the IP and name of the client, will send it back. This is great for large scale systems as the requests are only between client and server. Also, if there are duplicate servers offering the exact same data on the system, it can expand even larger without slowing down the sharing.

In contrast is query flooding. Here each client is connected to other clients on the same network. When one wants data, it will send a query to another peer in search of it. If that client doesn’t have it, it will send out a query to its connected clients and so on until the data is found. This is alright for very small networks, but once you get into bigger networks you start having problems. Due to the queries for each client, it can take up a good bit of bandwidth sending out multiple queries to multiple clients. So query flooding doesn’t scale well and is only practical on a few clients.

Questions 2

Reliability of a distributed system is how continues or delivers service if one of its components goes down. Replications help this, as there are many different components doing or storing the exact same things. If one or more of the components go down, the system can reroute service to go through one of the other replications to continue service. Exact replications will also help with consistency when using the system. Whether you are using any of the replications, each one will perform the exact same way. Work won’t be effected by bad or damaged replications if the service is routed around them.