QUIZ 1 GRADING RUBRICS

Q1: 20 pts
a) 3 pts
   Lawsuit  Almost everyone is correct.
b) 2 pts each, 8 pts in total
   Napster advantage: Fast and efficient query/search; answer is guaranteed to be correct;
   consistent view of network
   Napster disadv: Single point of failure; center server needs enough computation power;
   unreliable result
   Guntella adv: Robust due to fully distributed; open protocol
   Guntella disadv: Inefficient for flooding queries; management is not efficient

— Each of your answers should at least mention one of the above-mentioned points and
give a brief explanation. For example, if your answer has only one word, e.g.,
“inefficient”, or “robust”, you won’t get the full marks. You gotta explain it is robust
because it doesn’t have a single point of failure, or it’s inefficient when flooding queries
happen

c) 3 pts each, 6 pts in total
   i. Some peer has fast connectivity, lost of storage, wide bandwidth, or fast processor,
      serves temporary indexing for slower clients, knows other super peers.
      — Should mention a super node knows other super nodes and slower peers. 2 pts
      — Should mention a super node has a better performance. 1 pts

   ii. To improve performance and reliability by ensuring super nodes have efficient
      resource management and predictable operations
      — Performance, reliability, and easy-to-manage are the main reasons and you should
      mention at least one of them. Some answers mentioned security, which is fine and can
      get 2 of 3 points

   d) 3 pts
   1. **Uniform** (1pt) and **Unique** (1pt) distribution of outputs **Computationally Fast**, pick
      at least two to get full credits

Q2: 20 pts
a) 10 pts
   0, 30 —> 0
   5, 15, 16 —> 16
   20 —> 26
   — We have **6 keys** need to be assigned.

b) 10 pts
   This question has two requirements: first you gotta give a short description what routing
   state must be maintained, and then show a table for node 1.
   0 N4
   1 N4
The table has 5 rows

**Q3: 20pts**

a) Almost everyone is correct.
b) Miss 1 or 2 points if you didn’t take in to account the underlying structure of Kazaa

**Q4: 20 pts**

1. Wrong Step (-2 pts)
2. No specific described steps (-2 pts)
3. No obvious assumption (-1 pts)

a) 10 pts
   (1) c3d b2e
   (2) c1d b1e
   (3) a2d b3e
   (4) c4d
   (5) d4b
   (6) d4a b4e
b) 10 pts
   (1)c4d b1e
   (2)c2d b2e d4a
   (3)a3d b3e d4b
   (4)c1d b4e

**Q5: 20 pts**

a) 6 pts (two points each)
   Explain the meaning and how it work

b) 8 pts (two points each) **Miss point mainly because the answer is not precise.**
   Time to Satisfy: the time that has elapsed from when the query is first submitted by the user, to when the user’s client receives the Nth result.
   Probability of Satisfaction: The probability of getting enough result, where enough means a previous set threshold.
   Number of Results: The size of result set
   Aggregated Bandwidth: The bandwidth used for message flooding during the process

c) 6 pts
   Ideal answer fits each strategy to different network scenario