

**Questions(100 points):**

Suppose you will design and setup a mining pool for Bitcoin. The miners have powerful rigs, say, state-of-the-art rigs that can try  $2^{44}$  nonces per second. And the pool is expected to support at most 65536 miners to work concurrently. Please give a high-level description of your design, as well as necessary details.

The description should include but not be limited to: What shall the pool manager do? What data shall the pool manager send to the pool members? What shall the pool member do? What data shall the pool members send to the pool manager?