

1) Cryptographic primitives

- a. Most students outlined the correct answer.
- b. i) Most students properly defined pre-image resistance.
ii) Most students properly defined second pre-image resistance.
iii) Most students properly defined collision resistance.
- c. Most students understood puzzle-friendliness.
- d. Not all students managed to give a proper example of a collision resistant but not pre-image resistant function.
- e. While most students answered correctly, not all students motivated their answer properly.
- f. i) Most students outlined the correct answer.
ii) Most students outlined the correct answer.

2) Blockchain primitives

- a. i) Most students outlined the correct answer.
ii) Many students failed to stress that PoW must be combined with a rule for the chain selection (e.g. the longest chain, or the longest chain with the most PoW).
- b. Most students outlined the correct answer.
- c. i) Most students outlined the correct answer.
ii) Most students outlined the correct answer.
- d. Most students outlined the FLP definition.
- e. Most students outlined the correct answer.
- f. i) Most students outlined the correct answer.
ii) Several students missed relevant parameters that influence the stale block rate and failed to outline a mathematical expression.

3) Smart contracts

- a. i) While some people appear to have missed the goal of the question, many students outlined the correct answer.
ii) Most students outlined the correct answer.
iii) While most students understood that the timestamp might not be reliable, many missed motivating quantitatively why that is the case.
- b. i) Most students outlined the correct answer.
ii) Several students skipped this question, some answered without code and a few answered marvelously with correct code.
iii) Surprisingly, few students thought that if a contract is destroyed, the data is deleted from the blockchain (which is wrong).

4) Scaling and Layer-Two Protocols

- a. Most students outlined the correct answer.
- b. i) Most students outlined the correct answer.
ii) Most students outlined the correct answer.
- c. Most students outlined the correct answer.
- d. Most students outlined the correct answer.

- e. Many students, but not all came up with a proper drawing for the protocol sequence.
- f.
 - i) Most students outlined the correct answer.
 - ii) Most students outlined the correct answer.