

Here are 15 of the most important questions, combining key concepts from all the provided lecture notes, and including questions worth 3, 4, and 5 marks:

15 Most Important Questions on Blockchain

1. **(3 Marks)** Describe the process of cross-chain asset transfer.
2. **** (4 Marks)**** Discuss the security risks associated with using centralized cryptocurrency exchanges as TTPs for asset transfer.
3. **** (5 Marks)**** Explain the concept of an atomic swap and its importance in cross-chain asset exchange.
4. **** (4 Marks)**** Describe how Hashlocks and Timelocks are used to ensure atomicity in cross-chain transactions.
5. **** (5 Marks)**** Walk through the step-by-step process of a Hashed Timelock Contract (HTLC) being used for an atomic swap between two parties.
6. **** (4 Marks)**** Explain what happens if one party fails to reveal the secret key in an HTLC transaction, and how the protocol handles this situation to ensure fairness.
7. **** (5 Marks)**** How does a multi-party atomic cross-chain swap work, and why is it more complex than a two-party swap?
8. **** (4 Marks)**** What is Hyperledger Indy, and what are its key characteristics?
9. **** (3 Marks)**** What is the role of the Aries Cloud Agent - Python (ACA-Py)?
10. **(5 Marks)** Provide a detailed explanation of the Aries architecture, including the roles of the agent, controller, and the communication between them.
11. **(4 Marks)** Explain the 51% vulnerability in brief.
12. **(5 Marks)** Elaborate on the vulnerabilities associated with smart contract execution.
13. **(3 Marks)** Describe the risks associated with criminal activities in the context of blockchain.
14. **(4 Marks)** Explain how Blockchain can be used to share and verify passport data.
15. **(5 Marks)** Describe the general architecture of a Government Information Sharing System and how Blockchain can improve it.