

# **Blockchain**

## **CBDH Exam**

**Blockchain BTA Certified Blockchain Developer - Hyperledger  
Exam**

**Questions & Answers  
Demo**

## Version: 9.0

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### Question: 1

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Level DB is the default database for Hyperledger Fabric and is particularly appropriate when ledger states comprise what type of data?

- A. Complex key-value pairs
- B. Rich Queries
- C. JSON data pairs
- D. Simple key-value pairs

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**Answer: D**

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Explanation:

Simple key-value pairs - LevelDB is the default and is particularly appropriate when ledger states are simple key-value pairs. A LevelDB database is closely co-located with a network node – it is embedded within the same operating system process. CouchDB is a particularly appropriate choice when ledger states are structured as JSON documents because CouchDB supports the rich queries and update of richer data types often found in business transactions. Implementation-wise, CouchDB runs in a separate operating system process, but there is still a 1:1 relation between a network node and a CouchDB instance. All of this is invisible to chaincode.

<https://hyperledger-fabric.readthedocs.io/en/release-1.3/ledger/ledger.html>

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### Question: 2

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When creating a network according to an organization's structure and also bootstrap a channel what are the following artifacts we would need to generate?

- A. Genesis Block, License File and Anchor Peer Configs for each organization.
- B. Genesis Block, ledger Configuration and Anchor Peer Configs for each organization.
- C. Genesis Block, Channel Configuration and Anchor Peer Configs for each organization.
- D. Genesis Block, Channel Configuration and Anchor MSP Configs for each organization.

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**Answer: C**

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Explanation:

To create a network according to an organization's structure, and to bootstrap a channel, we will need to generate the following artifacts: A genesis block, containing organization-specific certificates that serve to initialize the Fabric blockchain. Channel configuration information. Anchor peer configurations for each organization. An anchor peer serves as a fulcrum within an organization, for cross-organization ledger syncing using the Fabric gossip protocol.

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**Question: 3**

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Which Hyperledger tool would you select to invoke, deploy or query blocks, transactions and associated data, network information (name, status, list of nodes), chain codes and transaction families, as well as other relevant information stored in the ledger?

- A. Hyperledger Quilt
- B. Hyperledger Cello
- C. Hyperledger Caliper
- D. Hyperledger Explorer

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**Answer: D**

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Explanation:

Hyperledger explorer: Hyperledger explorer, which was originally contributed by IBM, Intel, and DTCC, can view, invoke, deploy or query blocks, transactions and associated data, network information (name, status, list of nodes), chain codes and transaction families, as well as other relevant information stored in the ledger.

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**Question: 4**

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Blockchain services consists of three major components.  
What are they? (Select three.)

- A. Consensus Manager
- B. Distributed Ledger
- C. Peer to Peer Protocol
- D. Reputation Manager
- E. Membership Services

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**Answer: A,B,C**

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Explanation:

1. P2P Protocol is implemented over HTTP/2 standards and uses Google RPC.. P2P components defines messages used by peer nodes, from point to point to multicast. 2. Distributed Ledger manages the world state and the transaction log in the blockchain. 3. Consensus Manager defines the interface between the consensus algorithm and the other Hyperledger components.

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**Question: 5**

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The gossip data dissemination protocol performs which three functions? (Choose three.)

- A. Manages peer discovery and channel membership
- B. Disseminates ledger data across all peers on the channel
- C. Manages channel membership only
- D. Sync ledger state across all peers on any channel
- E. Sync ledger state across all peers on the channel

F. Manages peer discovery only

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**Answer: A,B,E**

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Explanation:

Gossip Protocol The gossip data dissemination protocol performs three functions Manages peer discovery and channel membership Disseminates ledger data across all peers on the channel Syncs ledger state across all peers on the channel.

References:

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**Question: 6**

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The Hyperledger Fabric framework is implemented on what programming environment?

- A. C++
- B. Node.js
- C. Go
- D. PHP
- E. Javascript
- F. Python

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**Answer: C**

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Explanation:

References:

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**Question: 7**

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You would like to download Hyperledger Fabric.  
What would be the command to start the process?

- A. ftp clone <https://github.com/hyperledger/fabric.sh>
- B. git clone <https://github.com/hyperledger/fabric.git>
- C. ftp clone <https://github.com/hyperledger/fabric.git>

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**Answer: B**

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Explanation:

Answer: <https://github.com/hyperledger/fabric.git>

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**Question: 8**

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What Hyperledger sponsored tool is a new open-source application development framework, which simplifies the creation of Hyperledger Fabric blockchain applications, thus reducing the time and complexity of development.

The tool aims at helping users to create blockchain applications based on Hyperledger Fabric without

needing to know the low-level (Go Programming) details involved in blockchain networks?

- A. Hyperledger Quilt
- B. Hyperledger Composer
- C. Hyperledger Explorer
- D. Hyperledger Cello

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**Answer: B**

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Explanation:

There is a new open-source application development framework, which simplifies the creation of Hyperledger Fabric blockchain applications, thus reducing the time and complexity of development. The tool aims at helping users to create blockchain applications based on Hyperledger Fabric without needing to know the low-level (Go Programming) details involved in blockchain networks.

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### Question: 9

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The CA (Certificate Authority) in Hyperledger Fabric issues the certificates. These certificates are used for identity validation and for transmission of encrypted data that only the owner (person, organization or software) of a specific certificate is able to decrypt and read. What types of certificates are issued by the CA?

- A. tcert
- B. ecert
- C. rootcert

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**Answer: A,B,C**

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Explanation:

Rootcert, tcert and ecert. As The CA (Fabric CA by default) issues a root certificate (rootCert) to each member (organization or individual) that is authorized to join the network. The CA also issues an enrollment certificate (eCert) to each member component, server-side applications and occasionally end users. Each enrolled user is granted an allocation of transaction certificates (tCerts). Each tCert authorizes one network transaction.

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### Question: 10

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Hyperledger Composer has the following two main components.

- A. Composer Framework and a Business Network Archive
- B. Composer Playground and a Business Network Configuration
- C. Composer Playground and a Business Network Archive
- D. Distributed Ledger and a Business Network Archive
- E. Distributed Ledger and Composer playground

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**Answer: C**

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Explanation:

There are two parts: 1. Business Network Archive which essentially captures the core data in a business network, including the business model, transaction logic, and access controls, the Business Network Archive packages these elements up and deploys them to a runtime. Business Network Archive files are stored as “.bna” files. AND 2. Composer Playground which is web-based tool allows developers to learn Hyperledger Composer, model out their business network (domain), test that network, and deploy that network to a live instance of a blockchain network. The playground keeps the development model in browser storage, allowing them to be easily uploaded or downloaded.

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**Question: 11**

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What type of organization can be thought of as a corporation run without any human involvement under the control of an incorruptible set of business rules?

- A. Limited Liability Corporation
- B. Decentralized Autonomous Organization (DAO)
- C. Corporation
- D. Trust

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**Answer: B**

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Explanation:

Decentralized Autonomous Organization (DAO) can be thought of as a corporation run without any human involvement under the control of an incorruptible set of business rules. A DAO can also be seen as the most complex form of a smart contract, where the bylaws of the decentralized organization are embedded into the code of the smart contract, using complex token governance rules.

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**Question: 12**

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Chaincode in Hyperledger Fabric is a decentralized transactional program which is running on the validating nodes. Chaincode implements the Chaincode interface in particular, Init and Invoke functions.

Which two statements about Chaincode is correct? (Select two.)

- A. Init is called during instantiate transaction after the chaincode container has been established for the first time, allowing the chaincode to initialize its internal data
- B. Invoke is called to update or query the ledger after a proposal transaction. Update state variables are committed to the ledger before the transaction is committed
- C. Init is called during Instantiate transaction after the chaincode ledger has been established for the first time, allowing the chaincode to initialize its internal data
- D. Invoke is called to update or query the ledger in a proposal transaction. Updated state variables are not committed to the ledger until the transaction is committed.

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**Answer: A,D**

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Explanation:

Chaincode is a decentralized transactional program, running on the validating nodes. As with every chaincode, it implements the Chaincode interface in particular, Init and Invoke functions. Init is called during Instantiate transaction after the chaincode container has been established for the first time, allowing the chaincode to initialize its internal data. Invoke is called to update or query the ledger in a proposal transaction. Updated state variables are not committed to the ledger until the transaction is committed.

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**Question: 13**

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Blockchain solutions are comprised of four building blocks. Which of the following answers list the building blocks?

- A. Shared ledger, Privacy, Trust, and Smart Contracts or (Chaincode)
- B. Shared ledger, Centralization, Trustless, and Smart Contracts or (Chaincode)
- C. Shared ledger, Privacy, Trustless, and Smart Contracts or (Chaincode)
- D. Shared ledger, Centralization, Trust, and Smart Contacts or (Chaincode)

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**Answer: A**

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Explanation:

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**Question: 14**

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An \_\_\_\_\_ is defined as a communication node that is responsible for the distribution of blockchain transactions in Hyperledger Fabric.

- A. MSP
- B. Peer Node
- C. Client Node
- D. Endorsing Node
- E. Orderer

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**Answer: E**

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Explanation:

Orderer Ordering services handles the main function of the Hyperledger Fabric to maintain consistency in the transactions processes. Ordering services provides a shared communication to clients and peers and helps in broadcasting the messages containing transactions.

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**Question: 15**

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The ledger system in Hyperledger Fabric uses what database by default?

- A. CouchDB
- B. LevelDB
- C. MySQL
- D. MS SQL

E. PostGres SQL

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**Answer: B**

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Explanation:

The ledger system in Hyperledger fabric uses levelDB. By definition, LevelDB allows concurrent writers to safely insert data into the database by providing internal synchronization. LevelDB uses very coarse-grained synchronization which forces all writes to proceed in an ordered, first-come-first-served basis, effectively reduces throughput to a single thread. State database options include LevelDB and CouchDB. LevelDB is the default key-value state database embedded in the peer process. CouchDB is an optional alternative external state database. Like the LevelDB key-value store, CouchDB can store any binary data that is modeled in chaincode (CouchDB attachment functionality is used internally for non-JSON binary data). But as a JSON document store, CouchDB additionally enables rich query against the chaincode data, when chaincode values (e.g. assets) are modeled as JSON data

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**Question: 16**

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Which of the following is a role in Fabric that has permission to create transactions and query network data?

- A. Chain Transactor
- B. Chain Administrator
- C. Chain Auditor
- D. Chain Member

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**Answer: A**

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Explanation:

References:

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**Question: 17**

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Hyperledger is an open source project that came out of the \_\_\_\_\_. It was created in order to help advance \_\_\_\_\_ blockchain technologies. It's a global open source collaboration involving leaders from numerous industries.

- A. Linux Foundation, Cross Industry
- B. Defense Industry, Military Communications
- C. Linux Foundation, Military Communications
- D. Defense Industry, Financial Oriented
- E. Linux Foundation, Financial Oriented

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**Answer: A**

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Explanation:

Hyperledger is an open source project that came out of the LF and was created in order to help



advance cross-industry blockchain technologies. It's a global open source collaboration involving leaders from numerous industries.

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**Question: 18**

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A transaction in Hyperledger Fabric is a request to the blockchain to execute a function on the ledger. By what the function is implemented?

- A. Chaincode
- B. Service Account
- C. SDK
- D. API

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**Answer: A**

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Explanation:

Chaincode is programmatic logic. A transaction is a request to the blockchain to execute a function on the ledger. The function is implemented by a chaincode. Aka smart contracts

References:

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**Question: 19**

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When your developing with Fabric Composer which of the following is true?

- A. Decrease the time of development
- B. Simplifies the development of applications
- C. Simplifies the code integration of applications
- D. Increases the time of development

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**Answer: A**

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Explanation:

Hyperledger Composer is an open-source application development framework which simplifies the creation of Hyperledger Fabric blockchain applications, thus reducing the time and complexity of development. The tool aims at helping users to create blockchain applications based on Hyperledger Fabric without needing to know the low-level (Go Programming) details involved in blockchain networks.

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**Question: 20**

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Chaincode Services uses Docker to host (deploy) the chaincode without relying on any virtual machine or computer language.

What would be the main reason or best reason that Hyperledger chose containers over virtual machines?

- A. Docker provides a secured, lightweight method to sandbox chaincode execution that is "locked down".

- B. Docker provides a secured, lightweight method to sandbox chaincode execution that is “locked down” but additional programming languages cannot be enabled
- C. Docker provides a secured, lightweight method to sandbox chaincode execution that is not “locked down”
- D. Docker is fully compatible with Hyperledger and Linux with an upgrade subscription.

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**Answer: A**

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Explanation:

Docker provides a secured, lightweight method to sandbox chaincode execution that is "locked down" Chaincode Services uses Docker to host (deploy) the chaincode without relying on any virtual machine or computer language. Docker provides a secured, lightweight method to sandbox chaincode execution. The environment is a "locked down" and secured container, along with a set of signed base images containing secure OS and chaincode language, runtime and SDK images for Golang Additional programming languages can be enabled

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**Question: 21**

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What type of ledger refers to a distributed ledger that doesn't require a native currency to operate?

- A. Tokenless
- B. Public
- C. Enterprise
- D. Private

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**Answer: A**

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Explanation:

A tokenless ledger refers to a distributed ledger that doesn't require a native currency to operate. Generally, in a private blockchain tokens are not needed due to resources controlled by one party.