Preparation Guide

Edition 202011

Content

1. Overview

EXIN Blockchain Foundation (BLOCKCHAINF.EN)

Scope

EXIN Blockchain Foundation is a certification that validates a professional's knowledge about:

- blockchain basics
- blockchain challenges
- applications of a blockchain
- blockchain innovations

Summary

EXIN Blockchain Foundation is a foundation level certification. It validates a professional's knowledge about blockchain as a ledger with potential as a worldwide, decentralized record for the registration, inventory, and transfer of assets: finance, property, products and intangible assets such as votes, software, health data and ideas. The certification covers the basic concepts of blockchain, the potential fields of application, the potential value for the organization and the technology driving blockchain.

Context

The EXIN Blockchain Foundation certification is part of the EXIN Blockchain qualification program.

Target Group

This certification is tailored to professionals in both business and IT who have, or aim to have, a professional role in blockchain as a cryptographic and smart contract solution.

Requirements for Certification

- Successful completion of the EXIN Blockchain Foundation exam.

Examination Details

Examination type:	Multiple-choice questions
Number of questions:	40
Pass mark:	65%
Open book/notes:	No
Notes:	No
Electronic equipment/aides permitted:	No
Exam duration:	60 minutes

The Rules and Regulations for EXIN's examinations apply to this exam.

Bloom level

The EXIN Blockchain Foundation certification tests candidates at Bloom Level 1 and 2 according to Bloom's Revised Taxonomy:

- Bloom Level 1: Remembering – relies on recall of information. Candidates will need to absorb, remember, recognize and recall.
- Bloom Level 2: Understanding – a step beyond remembering. Understanding shows that candidates comprehend what is presented and can evaluate how the learning material may be applied in their own environment. This type of questions aims to demonstrate that the candidate is able to organize, compare, interpret and choose the correct description of facts and ideas.

Training

Contact hours

The recommended number of contact hours for this training course is 14. This includes group assignments, exam preparation and short breaks. This number of hours does not include lunch breaks, homework and the exam.

Indication Study Effort

60 hours, depending on existing knowledge.

Training Organization

You can find a list of our accredited training organizations at www.exin.com.

2. Exam Requirements

The exam requirements are specified in the exam specifications. The following table lists the topics of the module (exam requirements) and the subtopics (exam specifications).

Exam Requirements	Exam Specifications	Weight
1. Blockchain Basics		**37.5%**
	1.1 Blockchain Technology	15%
	1.2 Additional Blockchain Elements	12.5%
	1.3 Structure of a Blockchain Network	10%
2. Blockchain Challenges		**17.5%**
	2.1 Challenges for a Blockchain	10%
	2.2 Blockchain Risk Mitigation	7.5%
3. Applications of a Blockchain		**32.5%**
	3.1 Blockchain Use Case	2.5%
	3.2 Blockchain Technology Supporting Businesses	7.5%
	3.3 Blockchain Technology Supporting People	10%
	3.4 Expanding Blockchain Applications	7.5%
	3.5 Blockchain and the World Economy	5%
4. Blockchain Innovations		**12.5%**
	4.1 Innovations in Blockchain Technology	12.5%
	Total	**100%**

Exam Specifications

1 Blockchain Basics

1.1 Blockchain Technology

The candidate can…

1.1.1 explain how a blockchain works.
1.1.2 explain what a node is.
1.1.3 identify the role of a node in a network.
1.1.4 explain what tokens are.
1.1.5 differentiate between public, private and hybrid blockchains.

1.2 Additional Blockchain Elements

The candidate can…

1.2.1 explain how cryptography is used in a blockchain.
1.2.2 explain how private and public keys are used in a blockchain.
1.2.3 explain how hashes are used in a blockchain.
1.2.4 explain the purpose ledgers have in a blockchain.
1.2.5 explain the role mining has in a blockchain.

1.3 Structure of a Blockchain Network

The candidate can…

1.3.1 recognize the types of consensus algorithms from a description.
1.3.2 identify advantages and disadvantages of different consensus algorithms.

2 Blockchain Challenges

2.1 Challenges for a Blockchain

The candidate can…

2.1.1 identify blockchain vulnerabilities.
2.1.2 identify the risks community fractures and feuds pose to a blockchain.
2.1.3 identify the risks fraud and scams pose to a blockchain.

2.2 Blockchain Risk Mitigation

The candidate can…

2.2.1 explain how the additional blockchain elements can be used to mitigate blockchain risks.
2.2.2 explain the role of the public witness in a blockchain.

3 Applications of a Blockchain

3.1 Blockchain Use Case

The candidate can…

3.1.1 explain in which scenarios a blockchain is useful.

3.2 Blockchain Technology Supporting Businesses

The candidate can…

3.2.1 explain how cryptocurrencies are used.
3.2.2 identify the blockchain technology used in a scenario.
3.2.3 differentiate between blockchain networks.

3.3 Blockchain Technology Supporting People

The candidate can…

3.3.1 explain the use of smart contracts.
3.3.2 explain the use of decentralized applications (DApps).
3.3.3 explain the role of decentralized autonomous organizations (DAO) and sophisticated smart contracts.

3.4 Expanding Blockchain Applications

The candidate can…

3.4.1 describe possible applications for a blockchain with regard to identity.
3.4.2 identify the possibilities of combining a blockchain with internet of things (IoT) or artificial intelligence (AI).
3.4.3 identify the use of decentralized marketplaces and exchanges facilitated by blockchain technology.

3.5 Blockchain and the World Economy
The candidate can…
3.5.1 describe the role a blockchain can play in the supply chain.
3.5.2 describe the role a blockchain can play in cross-border money transfers.

4 Blockchain Innovations

4.1 Innovations in Blockchain Technology
The candidate can…
4.1.1 explain what digital fiat currency and disruption in banking and currency are.
4.1.2 explain how blockchain technology can change insurance.
4.1.3 explain the use of blockchain technology for the protection of intellectual property rights (IP) and provenance.
4.1.4 explain how blockchain technology may change governments.
4.1.5 identify applications for blockchain technology in e-mail and the trust layer for the internet.

3. List of Basic Concepts

This chapter contains the terms and abbreviations with which candidates should be familiar.

Please note that knowledge of these terms alone does not suffice for the exam; the candidate must understand the concepts and be able to provide examples.

asymmetric encryption
artificial intelligence (AI)
- strong AI / general AI
- weak AI / narrow AI

block header
blockchain
- hybrid blockchain
- private blockchain
- public blockchain

connected device
consensus algorithm
- Delegated Proof of Stake (DPoS)
- Proof of Authority (PoA)
- Proof of Burn
- Proof of Capacity (PoC)
- Proof of Elapsed Time (PoET)
- Proof of Space (PoSpace)
- Proof of Stake (PoS)
- Proof of Work (PoW)

cryptocurrency
cryptography
decentralized application (DApp)
decentralized autonomous organization (DAO)
decentralized exchange
decentralized identity
decentralized marketplace
digital fiat currency / central bank digital currency (CBDC)
distributed ledger technology (DLT)
e-mail spam
externally owned account (EOA)
hacking
hash
intellectual property rights (IP)
internet of things (IoT)
lean governments
ledger
mining
near-field communication (NFC)
node
- full node
- lightweight node / client

nonce
opcode
peer-to-peer network (P2P)
private key
public key
public witness
radio frequency identification (RFID)
second generation tokens
segregated witness (SegWit)
self-sovereign identity
smart contract
spoofing
stable coin
supply chain
token
trusted execution environment (TEE)

virtual machine (VM)
vulnerabilities

4. Literature

Exam Literature

The knowledge required for the exam is covered in the following literature:

A. Tiana Laurence
Introduction to Blockchain Technology – The many faces of blockchain technology in the 21st century
Van Haren Publishing (November 2019)
ISBN: 978 94 018 0499 8 (hardcopy)
ISBN: 978 94 018 0501 8 (eBook)
ISBN: 978 94 018 0504 9 (ePub)

Literature Matrix

Exam Requirements	Exam Specifications	Reference
1. Blockchain Basics		
	1.1 Blockchain Technology	Chapter 1, Chapter 2
	1.2 Additional Blockchain Elements	Chapter 1, Chapter 2
	1.3 Structure of a Blockchain Network	Chapter 3
2. Blockchain Challenges		
	2.1 Challenges for a Blockchain	Chapter 2, Chapter 4, Chapter 10
	2.2 Blockchain Risk Mitigation	Chapter 2, Chapter 4, Chapter 10
3. Applications of a Blockchain		
	3.1 Blockchain Use Case	Chapter 4, Chapter 5, Chapter 6
	3.2 Blockchain Technology Supporting Businesses	Chapter 1, Chapter 4, Chapter 8
	3.3 Blockchain Technology Supporting People	Chapter 5, Chapter 9
	3.4 Expanding Blockchain Applications	Chapter 6
	3.5 Blockchain and the World Economy	Chapter 7
4. Blockchain Innovations		
	4.1 Innovations in Blockchain Technology	Chapter 8, Chapter 9

Contact EXIN

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