

Question sheet

Name:	_____
ID number:	_____
Signature:	_____

In order to receive the Blockchain Foundation Examination Certificate, the examination passed in the multiple-choice procedure must be successfully passed.

Language: English

Duration: 45 minutes

Format: 30 multiple choice questions, each with two, three or four choices, one, two, three, or all four answers may be correct.

Minimum points: 20 of 30

Each completely correctly answered question is awarded one point. If questions are answered incorrectly, 0 points are awarded (but no points are deducted). A question is considered to have been answered incorrectly if a wrong answer is marked or not all correct answers have been checked.

Aid for completing the answer form:

Set marking correctly:

For this test, you will receive a questionnaire and a reply form. The answers must be made by means of appropriate markings on the answer sheet. This is evaluated by machine, and handwritten notes are not taken into account. Checkboxes on the questionnaire are not evaluated! For your markings, use only a black or blue ballpoint pen of normal character. The markings must be clearly and precisely positioned through a cross. If you want to correct a check, fill the checkbox completely, which means that this checkbox is evaluated as an empty check box.

Completion of the matriculation number:

At the beginning of the exam, enter your 9-digit matriculation number on the answer sheet in the field provided for this purpose. Then transfer your matriculation number to the boxes below, which are numbered from 0 to 9. The first column corresponds to the 1st digit of your matriculation number, the second column corresponds to the 2nd digit of your matriculation number, etc.

Transferring the right group:

Please transfer the group you find in the questionnaire header to the corresponding field on the answer sheet.

Good luck on the exam!

- 1) Which of the following statements are correct about the topic “proof of work (POW)”?
 - a) In POW, the participants aim to find a result with certain features by executing intensive computing operations.
 - b) POW is only used in bitcoins
 - c) POW helps to achieve a consensus.

- 2) Which of the following statements on Bitcoin are true?
 - a) The price of bitcoin is determined by the supply and demand of the market.
 - b) The supply of fresh Bitcoin is foreseeable.
 - c) Bitcoin enabled secure online payments for the first time.

- 3) Which provisions of the General Data Protection Act (GDPR) are particular crucial with regards to a public blockchain?
 - a) It is necessary to ensure the integrity of personal data.
 - b) The right of erasure.
 - c) Personal data must not leave the EU.

- 4) Which statements regarding the common bitcoin units are correct?
 - a) Bitcoins are each divided in to 100 million parts.
 - b) 10,000,000 satoshi amount to one bitcoin.
 - c) 10 bitcents equal 1 bitcoin.

- 5) What are the advantages of smart contracts?
 - a) Sophisticated technology
 - b) Efficiency
 - c) Security

- 6) Which statements regarding distributed ledger technology are true?
 - a) Distributed ledger technologies can be distinguished by the way an agreement is reached (consensus).
 - b) Only blockchains with encrypted user data are called distributed ledger chains.
 - c) It refers also to decentralized account books or transaction databases.

- 7) What is correct with regards to anonymisation and pseudonymisation?
 - a) Personal data is changed in such a way in anonymisation that this data can only be restored by the person themselves.
 - b) Anonymisation is changing of personal data in such a way that this data can no longer be allocated to a person.
 - c) It should be kept in mind in pseudonymisation that every person involved has exactly one pseudonym.

- 8) Which statements apply to the bitcoin blockchain?
- a) A bitcoin can not be lost.
 - b) There is no upper limit for the total amount of bitcoins generated.
 - c) The consensus mechanism is proof of work.
- 9) Select only the true statements regarding the topic “cryptocurrency”:
- a) A cryptocurrency does not automatically have to be administered in a blockchain.
 - b) The value of such a currency is created solely by the supply and demand of a specific group of people who believe in this currency
 - c) A cryptocurrency is always inflationary.
- 10) To initiate a bitcoin transaction, the sender requires ...
- a) ... the private key of the recipient account.
 - b) ... the public address of the recipient account.
 - c) ... the transaction amount.
- 11) Which of the following statements are correct regarding the topic “proof of stake (POS)”?
- a) In POS, it is not possible to take over the network solely by possessing computing power.
 - b) POS is NOT currently used in bitcoin.
 - c) The activity is called “forging”.
- 12) What type of blockchain is it if every participant can create a new block?
- a) public blockchain
 - b) symmetrical blockchain
 - c) private blockchain
- 13) Which of the following systems describe symmetric cryptosystems?
- a) AES - Advanced Encryption Standard
 - b) RSA
 - c) DES - Data Encryption Standard
- 14) Which statements are true regarding the regulation of cryptocurrencies in Germany?
- a) Bitcoins are units of account as per § 1 para. 11 of the German Banking Act [KWG].
 - b) In the absence of regulation, trading in cryptocurrencies (bitcoin) is a criminal offence according to the German Federal Financial Supervisory Authority [BaFin] as these are not financial instruments.
 - c) The functions of each token are very important for the legal classification of a initial coin offering (ICO).
- 15) Assess the statements regarding the topic “ownership and blockchain”. Select only the true statements
- a) In a blockchain, the owner can prove their identity as they possess the matching private key to a pseudonym or their public key.
 - b) In a blockchain transaction, the ownership briefly goes to a neutral third party so that the authenticity can be confirmed.
 - c) A change of ownership that does not change the blockchain can be brought about by transferring the private key.

- 16)** Which of the following are different classes of token (according to the German Federal Financial Supervisory Authority [BaFin])?
- a) Utility Token
 - b) Security Token
 - c) Payment Token
- 17)** Which of the following statements are true of Initial Coin Offering (ICO)?
- a) Bitcoin is used as a preferred platform for ICOs.
 - b) ICO provides a way of collecting funds for crypto projects.
 - c) ICO tokens are often based on INFLUE tokens.
- 18)** What possibilities are there to circumvent incompatibilities with the General Data Protection Regulation (GDPR)?
- a) Lightning protocol
 - b) Special provisions for blockchains to be published by the legislature within the framework of the GDPR
 - c) SegWit
- 19)** Which of the following statements regarding digital currency are true?
- a) Each participant of the bitcoin network can be identified via his own public key.
 - b) Bitcoin transactions are based on pseudonymous identities.
 - c) Ethereum transactions are based on anonymous identities.
- 20)** Which consensus algorithms are currently known?
- a) Proof of Work
 - b) Proof of Time
 - c) Proof of Peer
- 21)** What are the disadvantages of blockchain technology?
- a) Very little protection against loss of data.
 - b) No easy integration into existing regulations (e.g. GDPR)
 - c) Less throughput and a reduced number of transactions
- 22)** What is correct regarding the definition of centralized and decentralized systems?
- a) In decentralized systems, every node must communicate with every other node.
 - b) There is always a single point of failure in a decentralized system that can bring the system to a standstill.
 - c) A distributed (decentralized) system is a collection of independent computers that are presented as a single system for the user.

- 23)** Which requirements are placed on a proof of work (POW)?
- a) difficult to check
 - b) difficult to solve
 - c) only solvable with pre-existing knowledge
- 24)** Which statements are true regarding hash functions?
- a) The hash function is required in blockchains to reach a consensus in the network .
 - b) Two identical strings should always result in the same hash value.
 - c) With a given hash value, one can always deduce the original information. (verification function).
- 25)** Which of the following statements on asymmetric encryption are correct?
- a) "Asymmetric cryptosystem" is a generic term for public-key encryption, public-key authentication and digital signatures.
 - b) RSA (Rivest, Shamir and Adleman) is an asymmetric cryptographic method that can be used for both encryption and digital signing.
 - c) In an asymmetric encryption process, specially matched key pairs are used.
- 26)** Which of the following statements regarding hash functions are true?
- a) A hash function is a character string agreed between two parties that is used for authentication.
 - b) The cryptological hash function is a special form of the hash function which is collision resistant or a one-way function (or both).
 - c) MD5 (Message Digest Algorithm 5) is an example of a hash function.
- 27)** What is confidentiality?
- a) One of the characteristics of information to be maintained in the context of information security
 - b) Property that an entity is what it claims to be
 - c) Property that information is well-known and communicated
- 28)** What features does a wallet have?
- a) Bitcoins can be managed by means of a wallet
 - b) The wallet generates for every address a pair of keys, comprising a private and a public key.
 - c) The pair of keys (public & private key) are converted into a public address (account number).
- 29)** Which statements are true with regards to smart contracts?
- a) Smart contracts are contracts that are based on computer protocols and a blockchain, but can not be executed and checked by themselves.
 - b) Smart contracts can replace a blockchain.
 - c) Smart contracts are comparable to conventional contracts.

- 30)** What is promised by running a Blockchain and omitting the central, trusted third party (intermediary)?
- a) Transactions become quicker.
 - b) Transactions become cheaper.
 - c) The transactions can not be deleted and are not faked by anyone.

Answer sheet

For automatic analysis

First name:
Last name:
Date / Signature:

Matriculation number

--	--	--	--	--	--	--	--	--	--	--

0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9

Group: A B C D E F

This answer sheet is read automatically. Please do not fold, do not crease and do not stain. Use a blue or black ballpoint pen of normal thickness to mark. Please answer carefully by placing a cross in the box:



Only clearly recognizable position-accurate markings are evaluated! If you want to correct a check, fill the box with the wrong mark with your pencil completely, which means that this checkbox is evaluated as an empty box



Filled-in boxes cannot be corrected again. Any marks or labels outside the box fields can obstruct the evaluation.

	a	b	c	d
1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	a	b	c	d
25)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	a	b	c	d
49)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	a	b	c	d
9)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	a	b	c	d
33)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	a	b	c	d
17)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	a	b	c	d
41)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>