

Exam Date &amp; Time: 03-May-2023 (01:15 PM - 04:30 PM)



# CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

University Examination April 2023

B.Tech (IT)- VI

1.15 pm to 04.30 pm

## BLOCKCHAIN TECHNOLOGIES [IT384]

Marks: 70

Duration: 195 mins.

### Section- I

Answer all the questions.

Section Duration: 40 mins

1			Each block contains batches of valid transactions that are hashed and forms ____.	(1)
	1) Merkle tree	2) Cryptographic hash	3) Generic block	4) Temporary fork
2			What is gas in Ethereum?	(1)
	1) The cost of generating a correct block hash.	2) How much power the network has securing it in Giga Hashes.	3) A way of pricing transactions based on their computational complexity.	4) A measurement of how many nodes are attached to the network.
3			Which of the following is not true for Coinbase transaction?	(1)
	1) It is a special transaction to claim the reward.	2) It is first transaction in a block.	3) It is used to collect any transaction fees.	4) It is wallet account credit/debit transaction.
4			This is basic assumption for permissioned blockchain.	(1)
	1) It is closed network	2) It is open network	3) No miner is malicious	4) All above are true
5			By adopting which policy, inflow of bitcoin network can be controlled.	(1)
	1) Increase block size	2) Lower mining reward	3) Increase nonce value	4) Lower the mining time
6			Following statement is false about "mining pool".	(1)
	1) Pool members work together to solve the puzzle.	2) Based on the individual contributions pool members get rewarded.	3) Mining nodes pool their resources and share their computational powers over the network.	4) Anyone can be member of mining pool with just a CPU.
7			In PBFT consensus algorithm, message get committed only after _____ commitment (Here $f$ is the maximum number of faulty nodes allowed and $n$ is total number of nodes in network).	(1)
	1) $f$	2) $2f$	3) $2f+1$	4) $N$
8			One of the statements is wrong regarding to Hyperledger Fabric.	(1)
	1) Smart contract written in solidity helps to define asset in an application.	2) The MSP manages the identity and permissioned access into the network.	3) The Fabric channels enable sharing of highly confidential information within the network on a need-to-know basis.	4) The Endorsing peers validate the transaction's authenticity coming into the network.
9			Which of the following is not a property of permissioned networks?	(1)
	1) Need special permissions to read, access, and write information on the ledger.	2) There are restrictions to join the network.	3) Granting equal and open rights to all participants in the network.	4) Specific roles can be assigned to each participant.
10			What does the output generated by the solidity compiler contain?	(1)
	1) contract metadata	2) Contract ABI	3) Contract Bytecode	4) All of the above
11			'memory' keyword is used in solidity smart contract to store ____.	(1)
	1) temporary variables	2) state variables	3) dynamic variables	4) global variable
12			This function conditionally throw an error message in solidity.	(1)
	1) require(x!=y,"error message")	2) require("error message",x!=y)	3) revert(p!=q,"error message")	4) None of these
13			Which among the following is the correct syntax for retrieving the balance of a contract using solidity?	(1)
	1) payable(this).balance;	2) address(this).balance;	3) self.balance;	4) this.balance;
14			What is first occurs in the Fabric transaction flow?	(1)
	1) Notifying the Client	2) Generation of transaction proposal	3) Block distribution	4) Validating transaction
15			Which of the following is by default ledger system in Hyperledger fabric?	(1)
	1) MongoDB	2) CouchDB	3) LevelDB	4) NoSQL
16			Choose correct lifecycle stages of Chaincode of fabric 2.2.	(1)
	1) Package, Install, Commit	2) Package, Install, Invoke	3) Package, Approve and Commit	4) Package, Install, Approve and Commit
17			I am not hyperledger framework!	(1)
	1) Hyperledger Ursa	2) Hyperledger Besu	3) Hyperledger Sawtooth	4) Hyperledger Indy
18			Which consensus algorithm is used in Bitcoin network?	(1)
	1) POET	2) POS	3) POW	4) PBFT
19			This is not a part of Block header.	(1)
	1) Timestamp	2) Transaction	3) Merkle root	4) Block hash
20			Is Blockchain completely public?	(1)
	1) Yes	2) No	3) Depends on the Cryptocurrency	4) Depends on the Blockchain network

### Section- II

Answer all the questions.

1			Write a short note on Ethereum transaction life cycle.	(7)
2			Illustrate different Ethereum accounts with their fields.	(5)
3			Explain Private, Public, Consortium types of blockchain network with example.	(5)
4			Define: 1) Genesis block 2) Merkle tree 3) Distributed ledger 4) Decentralization 5) Consensus mechanism	(5)
[OR] 5			Compare POW and POS.	(5)
6			Draw and explain single block structure of Blockchain.	(3)

**Section- III****Answer all the questions.**

1			Explain the Hyperledger fabric transaction flow with any use case.	(7)
2			Write a short note on Hyperledger fabric network component.	(5)
3			What are the key attributes of Blockchain technology?	(5)
4			Why is Blockchain a disruptive technology?	(5)
[OR] 5			What type of privacy and security issues exist in Blockchain technology?	(5)
6			Define: 1) Selfish mining 2) Zero knowledge proof 3) Double spending	(3)

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