

P P SAVANI UNIVERSITY

Seventh Semester of B. Tech. Examination

December 2022

SEIT4521 Blockchain Technology

Time: 10:00 a.m. To 12:30 p.m.

1.12.2022, Thursday

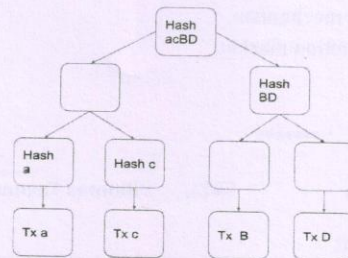
Maximum Marks: 60

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION - I

Q - 1	MCQ/Short Question/Fill in the Blanks (Any Five)	[05]	CO	BTL
(i)	Blockchain was first introduced in the white paper by (a) David Chaum (b) Satoshi Nakamoto (c) None of the above	/	1	1
(ii)	Before dive into blockchain immutability, we'll need to understand cryptographic hashing, True or False.		2	4
(iii)	Which feature is not part of DLT? (a) Distributed (b) Immutable (c) Centralized (d) Shared		4	2
(iv)	The concept of smart contract was invented by whom? (a) Satoshi Nakamoto (b) Wei Dai (c) Nick Szabo (d) Hal Finney		3	1
(v)	Hyperledger Fabric is one of the blockchain projects. True/False		5	4
(vi)	Identify the blockchain network. (a) Open blockchain network (b) Constraint blockchain network (c) Private blockchain network (d) None of the above		1	3
(vii)	Ethereum is created by (a) programmer Vitalik Buterin (b) Satoshi Nakamoto (c) Nick Szabo (d) Hal Finney		1	1
Q - 2 (a)	Explain Merkle tree and fill the values in the following figure.	[05]	2	5



Q - 2 (b)	Explain how intrusion detection is achieved in blockchain.	[05]	5	4
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OR

Q - 2 (a)	Compare public, private and hybrid types of blockchain.	[05]	1	4
Q - 2 (b)	Explain how 51% attack can get majority control of mining power in blockchain.	[05]	2	5
Q - 3 (a)	Explain the concept and need of consensus algorithms. Compare and contrast the three consensus algorithms of PoW, PoS and PoET.	[05]	3	4
Q - 3 (b)	Explain the Finney attack with an example and its solution.	[05]	3	1

OR

Q - 3 (a)	Explain the sybil attack with an example and its solution.	[05]	3	1
Q - 3 (b)	Explain the Vector76 attack with an example and its solution	[05]	3	1
Q - 4	Attempt any one.	[05]		
(i)	Explain z-cash, its problems and solutions.		4	5
(ii)	Explain how blockchain helps in maintaining integrity and authentication.		5	4

SECTION - II

Q - 1	MCQ/Short Question/Fill in the Blanks (Any Five)	[05]		
(i)	The configtxgen tool is used to create which configuration artifacts?		4	1
(ii)	Double Spending is not an example of Violated Integrity in Distributed Peer-to-peer Systems State True or False.		3	4
(iii)	The Disadvantages of Distributed Systems are (a) Coordination overhead (b) Higher Program complexity (c) Both of the given (d) None of the given		2	1
(iv)	Zk-SNARK stands for _____		3	1
(v)	_____ is a computer code running on top of a Blockchain containing a set of rules under which the parties agree.		5	1
(vi)	Users treated equally in private blockchain. State True or false.		2	4
(vii)	Bitcoin is implemented on Sawtooth. State True or False.		4	4
Q - 2 (a)	What are the difference between traditional and distributed system?	[05]	2	5
Q - 2 (b)	Explain the use of cryptogen and configtxgen.	[05]	4	1

OR

Q - 2 (a)	Draw and explain Hyperledger Greenhouse.	[05]	2	6
Q - 2 (b)	Discuss Blockchain fabric development.	[05]	3	1
Q - 3 (a)	Compare at least three different types of real life blockchain based applications.	[05]	3	4
Q - 3 (b)	Explain actors in Blockchain Environment.	[05]	2	1
OR				
Q - 3 (a)	Explain the core components of Blockchain architecture.	[05]	1	1
Q - 3 (b)	Write a short note on PoET consensus mechanism.	[05]	2	2
Q - 4	Discuss usage of Blockchain in a car auction market.	[05]	5	3

CO : Course Outcome Number

BTL : Blooms Taxonomy Level

Level of Bloom's Revised Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create