

Enrollment No.....



Faculty of Engineering  
End Sem (Odd) Examination Dec-2022  
OE00016 Blockchain Architecture

Programme: B.Tech.

Branch/Specialisation: All

**Duration: 3 Hrs.****Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. What is bitcoin? 1  
 (a) A technology that underpins Hyperledger Fabric  
 (b) Another name for blockchain  
 (c) An unregulated censorship resistant shadow currency  
 (d) A private network
- ii. The primary benefit of immutability is- 1  
 (a) Scalability (b) Tamper-proof  
 (c) Improved security (d) Increased efficiency
- iii. Asymmetric encryption uses- 1  
 (a) Public keys only  
 (b) Private keys only  
 (c) Public and private keys  
 (d) Proof of stake
- iv. Each block of a blockchain consists of which of the following- 1  
 (a) A hash pointer to the previous block  
 (b) Timestamp  
 (c) List of transactions  
 (d) All of these
- v. What is the term for when a blockchain splits? 1  
 (a) Fork (b) A Merger (c) A Sidechain (d) A Division
- vi. Which of the following is used to ensure consensus in Bitcoin framework? 1  
 (a) PoW (Proof of Work) (b) PoS (Proof of Stake)  
 (c) PoC (Proof of Concept) (d) None of these
- vii. What does P2P stand for? 1  
 (a) Password to Password (b) Product to Product  
 (c) Peer to Peer (d) Private Key to Public Key

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- viii. What is the purpose of a nonce? **1**  
 (a) Follows nouns  
 (b) A hash function  
 (c) Prevents double spending  
 (d) Sends information to the blockchain network
- ix. Which of the following advantages are provided by the Blockchain based solution for trade logistics? **1**  
 (a) Tamper proof and digitally signed documents  
 (b) Real time visibility and analytics  
 (c) Secure data exchanges  
 (d) All of these
- x. In the future, Blockchain applications will include- **1**  
 (a) Only transactions involving cryptocurrencies.  
 (b) Only transactions between companies or government agencies.  
 (c) Cryptocurrency transactions, transactions between governments, companies and consumers, voting, healthcare and many other applications  
 (d) Only transactions within the borders of 1 country
- Q.2 i. What are the applications of cryptocurrency? **3**  
 ii. What is importance cryptocurrency wallet and its type? **7**
- OR iii. What is double spending attack? Is it possible to double spend in a blockchain system? **7**
- Q.3 Attempt any two:  
 i. What do you mean by node in the blockchain technology? **5**  
 ii. What is SHA 256 encryption? Discuss its importance in blockchain. **5**  
 iii. List the key features of blockchain. **5**
- Q.4 i. Define POW & POS consensus algorithm. **4**  
 ii. Compare Private vs Public vs Consortium Blockchain. **6**
- OR iii. State difference between proof-of-work & proof-of-stake. **6**
- Q.5 i. Define fork. Compare hard & soft fork. **4**  
 ii. What is the role of the miner? Explain process to mine a block. **6**
- OR iii. List out main component in the blockchain technology and its importance. **6**

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- Q.6 Attempt any two:  
 i. What is smart contract? How it used with blockchain? **5**  
 ii. What are the basic issues to implement real-world services over blockchain? **5**  
 iii. Discuss use case of blockchain in the real-world scenario. **5**

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### Scheme of Marking



Faculty of Engineering  
End Sem (Odd) Examination Dec-2020  
Blockchain Architecture (T) - OE00016 (T)

Programme: B.Tech.	Branch/Specialisation:
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**Note:** The Paper Setter should provide the answer wise splitting of the marks in the scheme below.

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1	I	What is bitcoin?	1
	a.		
	b.		
	c.	An unregulated censorship resistant shadow currency	
	d.		
	II	The primary benefit of immutability is ...	1
	a.		
	b.	Tamper-proof	
	c.		
	d.		
	III	Asymmetric encryption uses:	1
	a.		
	b.		
	c.	Public and Private keys	
	d.		
	IV	Each block of a Blockchain consists of which of the following?	1
	a.		
	b.		
	c.		
	d.	All of the above	

V	What is the term for when a blockchain splits?	1
a.	A Fork	
VI	Which of the following is used to ensure consensus in Bitcoin framework?	1
a.	PoW (Proof of Work)	
b.		
c.		
d.		
VII	What does P2P stand for?	1
c.	Peer to Peer	
VIII	What is the purpose of a nonce?	1
c.	Prevents double spending	
IX	Which of the following advantages are provided by the blockchain based solution for trade logistics?	1
a.		
b.		
c.		
d.	All of the above	
X	In the future, Blockchain applications will include:	1

	c.	Cryptocurrency transactions, transactions between governments, companies and consumers, voting, healthcare and many other applications.	
Q.2	i	One mark for Each application	3
	ii	3 Marks for the type 4 for the importance and working	7
OR	iii	3 Marks to for defining the double spending and 4 marks for the process to perform it.	7
Q.3	i	2 Marks for the node and 3 for its components.	5
	ii	2 Marks for the explanation of SHA and 2 for its importance.	5
OR	iii	1 mark for each feature.	5
Q.4	i	1 mark for each difference	4
	ii	2 marks for the explanation and 4 for the difference.	6
OR	iii	2 marks for the explanation and 4 for the difference.	6
Q.5	i	2 marks for the definition and 2 for comparison.	4
	ii	2 marks for the role of the miner & 4 for the correct mining process.	6
OR	iii	3 marks for the listing out and 2 for its importance.	6
Q.6			
	i	3 marks for the smart contract and two for its application.	5
	ii	1 mark for each issue with basic explanation.	5
	iii	Give mark based on the scenario explained.	5

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