

Hall Ticket Number:

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Code No. : 18622 B

**VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD**

*Accredited by NAAC with A++ Grade*

**B.E. (I.T.) VIII-Semester Main & Backlog Examinations, June-2022**

**Block Chain (PE-VI)**

Time: 3 hours

Max. Marks: 60

*Note: Answer all questions from Part-A and any FIVE from Part-B*

**Part-A (10 × 2 = 20 Marks)**

Q. No.	Stem of the question	M	L	CO	PO
1.	Differentiate Bitcoin and Blockchain?	2	1	1	1
2.	Explain about distributed ledger.	2	1	1	1
3.	What is the role of POW in Bitcoin Blockchain?	2	2	2	1
4.	Define Byzantine Generals Problem?	2	1	2	1
5.	Differentiate Permission less and Permissioned Blockchain?	2	2	3	1
6.	Why Decentralization, Transparency and Immutability characteristics will not preserve in Permissioned blockchain?	2	3	3	2
7.	Summarize the key characteristics of Hyperledger fabric and Ethereum?	2	2	4	1
8.	Identify the role of MSP in Hyperledger fabric?	2	1	4	2
9.	Explain the role of supply chain in various business.	2	1	5	1
10.	Illustrate the public distribution system that is followed by government of India.	2	1	5	1
<b>Part-B (5 × 8 = 40 Marks)</b>					
11. a)	What are the various Features of Blockchain Technology?	4	2	1	1
b)	What is Bitcoin Address? Explain the construction process of Bitcoin Address? What is the advantage of this address?	4	3	1	2
12. a)	Which Elliptic Curve is used by Blockchain? Explain the Specification of this Curve?	4	2	2	1
b)	Explain with Key-Generation, Signing and Verification Algorithm of ECDSA in Blockchain?	4	2	2	1
13. a)	Describe Practical Byzantine Fault Tolerance? Explain, how Practical Byzantine Fault Tolerance solves the Byzantine Generals Problem	4	3	3	2
b)	Define Nakamoto Consensus Protocol. How it solves the Byzantine Generals Problem and other faults?	4	3	3	1

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14. a)	Write a solidity program for decentralized lottery system following these conditions: i) Every player bids certain ether on the lottery. ii) The winner will get all the ether bided by all the players.	4	3	4	2
b)	Explain in detail in Transactional flow of Hyper Ledger Fabric Architecture?	4	2	4	1
15. a)	Financial institutions spend a lot of money and manpower in KYC process. In spite of that the process is inefficient. Design a blockchain solution for the above problem.	4	4	5	2
b)	Design a blockchain solution for the following. Many times we are purchasing items (Eg: mangos, rice, tomatoes, etc.) labelled as organic but we don't know whether they are organic or not. Even if they are organic we don't know how much percentage they are organic.	4	4	5	2
16 a)	Explain Peer-to-Peer Network, Public Key Cryptography and Distributed Consensus? What is the role of these components in blockchain? Justify.	4	3	1	2
b)	Explain the DLT concepts of Blockchain in detail along with the benefits.	4	1	2	1
17.	Answer any <i>two</i> of the following:				
a)	Explain the requirements of consensus protocols.	4	2	3	2
b)	Explain the components of hyperledger fabric.	4	2	4	1
c)	Insurance sector has witnessed many false claims do to which there is loss to the insurance companies. Many genuine claims are not paid do to which there is loss to the insured people. Design a blockchain solution for the problem.	4	4	5	2

M : Marks; L: Bloom's Taxonomy Level; CO; Course Outcome; PO: Programme Outcome

i)	Blooms Taxonomy Level - 1	20
ii)	Blooms Taxonomy Level - 2	37.50
iii)	Blooms Taxonomy Level - 3 & 4	42.50

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