

Hall Ticket Number:

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Code No. : 17255 (B) N

**VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD***Accredited by NAAC with A++ Grade***B.E. (C.S.E.) VII-Semester Main Examinations, Dec.-23/Jan.-24****Block chain Platforms and Applications (PE-IV)**

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.	Can you explain the concept of distributed ledger technology in blockchain?	2	1	1	1
2.	Describe the cryptographic technique digital signatures in the context of blockchain?	2	2	1	1,2
3.	Why consensus algorithm is important for maintaining a distributed ledger?	2	3	2	1,2
4.	Explain key features of Paxos and Raft consensus algorithms.	2	1	2	1
5.	What are the key characteristics of Solidity?	2	1	3	1,2
6.	What are key technologies that support the Ethereum ecosystem?	2	1	3	1
7.	Explain architectural components of Hyperledger Fabric.	2	2	4	1,2
8.	How does the endorsement policy in Hyperledger Fabric work?	2	3	4	1,2,3
9.	How block chain helps in keeping records?	2	3	5	1,2
10.	Explain tuna fish problem.	2	2	5	1,2
<b>Part-B (5 × 8 = 40 Marks)</b>					
11. a)	What are popular blockchain platforms? Explain.	5	1	1	1
b)	How do these platforms differ in terms of their capabilities and applications?	3	1	1	1
12. a)	Can you provide an overview of the Proof of Elapsed Time (PoET) consensus algorithm and its role in distributed systems?	4	3	2	1,2
b)	What are the specific challenges and requirements for consensus algorithms in permissioned blockchain networks compared to public blockchains?	4	4	2	1,2,3
13. a)	What are Ether units in Solidity? Explain the process of transferring ethers from one account to another using metamask.	4	3	3	1,2,3
b)	How events and error handling implemented in Solidity, and what are their significance in smart contract development?	4	3	3	1,2,3

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14. a)	What are the primary goals and use cases for which Hyperledger Fabric was designed and what industries is it commonly used in?	4	2	4	1,2
b)	What is the role of channels in Hyperledger Fabric, and how do they facilitate private transactions and data isolation among participants?	4	3	4	1,2,3
15. a)	How block chain is solving the issues in financial services?	4	2	5	1,2
b)	How does blockchain work in food supply chain?	4	3	5	1,2,3
16. a)	How do Merkle trees enhance the efficiency and integrity of blockchain transactions?	4	3	1	1,2,3
b)	What is the Byzantine General's Problem, and how does it relate to ensuring fault tolerance in distributed systems?	4	4	2	1,2,3
17.	Answer any <i>two</i> of the following:				
a)	How does the mining process in Ethereum differ from that in Bitcoin, especially in terms of consensus mechanisms and rewards?	4	2	3	1,2
b)	Describe the process of transaction flow in hyperledger fabric.	4	2	4	1,2
c)	What types of records can be kept in blockchain? Discuss about record keeping.	4	2	5	1,2

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

i)	Blooms Taxonomy Level – 1	20%
ii)	Blooms Taxonomy Level – 2	32.5%
iii)	Blooms Taxonomy Level – 3 & 4	47.5%

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