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Seat No.	

Fourth Year B.Tech. (Computer Science and Engineering PE 3) (Semester - VIII) (CBCS) Examination, November - 2023

BLOCK CHAIN TECHNOLOGIES (Elective - III)

Sub. Code : 84728

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Day and Date : Thursday, 23 - 11 - 2023 **Total Marks : 70**

Time : 10.30 a.m. to 1.00 p.m.

Instructions :
1) **All Questions are compulsory.**
2) **Assume suitable data wherever necessary.**
3) **Figures to the right indicate full marks.**

Q1) Solve MCQs. (2 marks each) **[7×2=14]**

a) What is the purpose of a nonce?

i) A hash function

ii) Sends information to the blockchain network

iii) Follows nouns

iv) Prevents double spending

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b) What is an advantage of a public blockchain?

i) It does not use disinterested third parties to secure blocks, as all participants have a vested interest

ii) It is more resilient against fraud, because it uses federated nodes to combat fraud

iii) It is open to everyone in the world without permission and licensing requirements

iv) Its networks are built by for-profit companies and the working of the network is guaranteed

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P.T.O.

c) What is a miner?

i) A person doing calculation to verify a transaction

ii) Computers that validata and process blockchain transactions

iii) A type of blockchain

iv) An algorithm that predicts the next part of the chain

d) A bearer instrument used to transfer value between two parties over a blockchain network?

i) A DApp ii) A Hash

iii) A Node iv) A Token

e) Bitcoin is created by _____.

i) Saifedian Ammous ii) Bill Buterin

iii) Satoshi Nakamoto iv) None of the above

f) What is the role of a DAO (decentralized autonomous organization)?

i) Address the principal-agent dilemma with collaboration and acceptance of actions within agreed rules

ii) Embed regulated online smart contracts with the current judicial system, using public block chains

iii) Offer complex online smart contracts without any link to tangible and intangible offline assets

iv) Provide a private blockchain contract platform on which users can run their online applications

g) How can blockchain technology best help securing identity data?

i) By eliminating third parties through providing secured-data storage at a user's server

ii) By encoding all the health data and save it on a private and permissionless blockchain

iii) By protecting data that has been submitted on the internet using a cryptographic algorithm

iv) By providing information personal data without disclosing the actual data that proves it

Q2) Solve any 2 of the following. (7 marks each) **[2×7=14]**

a) Write the difference between Private and Public blockchain.

b) Write a note on Cryptography: Hash function.

c) What is Zero Knowledge proof; explain in detail with neat diagram.

Q3) Solve any 2 of the following. (7 marks each) **[2×7=14]**

a) Explain Advantage of blockchain over conventional distributed database

b) With a neat diagram explain Blockchain Network in detail.

c) How Proof of Stake consensus mechanism works in blockchain

Q4) Solve any 2 of the following. (7 marks each) **[2×7=14]**

a) With neat diagram illustrate Temporary block withholding attack.

b) Explain Sybil Attack in blockchain, What are different prevention mechanisms

c) Explain Roots of Bit coin and the growth of bitcoin

Q5) Solve any 2 of the following. (7 marks each) **[2×7=14]**

a) What are the benefits of IoT and blockchain convergence.

b) Write a note on future of Blockchain

c) Who are the stakeholders for the cryptocurrency/ cryptocurrency regulation, explain in detail

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