MCQ 1

Question: Which combination of CAP theorem properties becomes problematic when a network partition occurs in a two-node distributed system, specifically concerning data updates?

A) Consistency and Partition Tolerance

B) Availability and Partition Tolerance

C) Consistency and Availability

D) Consistency, Availability, and Partition Tolerance

Correct Answer: C

MCQ 2

Question: Beyond Proof-of-Work (PoW) and Proof-of-Stake (PoS), which consensus mechanism leverages a *trusted execution environment* (TEE) to ensure fairness in leader selection through guaranteed wait times, potentially mitigating energy consumption concerns associated with PoW?

A) Proof of Activity (PoA)

B) Proof of Elapsed Time (PoET)

C) Delegated Proof of Stake (DPoS)

D) Proof of Capacity (PoC)

Correct Answer: B

MCQ 3

Question: Satoshi Nakamoto's key innovation in Bitcoin, distinguishing it from earlier e-cash proposals like b-money and BitGold, was the introduction of:

A) Public key cryptography

B) Computational puzzles for currency generation

C) A peer-to-peer network for transaction maintenance

D) An ordered, cryptographically secured chain of transaction blocks

Correct Answer: D

MCQ 4

Question: Which blockchain type offers a balance between privacy and verifiability by combining permissioned and permissionless systems, allowing selective data disclosure through smart contracts while mitigating the risk of 51% attacks inherent in fully public blockchains?

A) Private Blockchain

B) Consortium Blockchain

C) Public Blockchain

D) Hybrid Blockchain

Correct Answer: D

MCQ 5

Question: Which consensus mechanism goes beyond simply considering the stake a user holds and incorporates the user's transaction history and activity patterns to assess trust and assign "importance" in the network's consensus process?

A) Proof of Deposit (PoD)

B) Proof of Importance (PoI)

C) Proof of Activity (PoA)

D) Delegated Proof of Stake (DPoS)

Correct Answer: B