

Instructions: All questions are compulsory. Use of non-programmable scientific calculator is allowed.

- Q.1** (a) What is Blockchain? Why do we need it? Discuss different areas of applications of Blockchain technology. (07)
 (b) What is Block in Blockchain technology? Discuss the structure of Blockchain block. (07)
- OR**
- (a) Discuss the evolution of Blockchain technology with its different generations. (07)
 (b) "Blockchain is a secure and transparent ledger" – Is this statement TRUE? Justify your answer. (07)
- Q.2** (a) What are UTXOs? Discuss transactions and UTXOs with examples. (07)
 (b) What is cryptocurrency? What is Bitcoin? Discuss the monetary policy of Bitcoin. (07)
- OR**
- (a) Compare and Contrast: PoW and PoS consensus protocols. (07)
 (b) Explain SHA256 algorithm in brief. (07)
- Q.3** (a) What is Ethereum? How the Blockchain of Ethereum differs from the Blockchain of Bitcoin? (07)
 (b) Discuss the concept of Public key and Private key. (07)
- OR**
- (a) What is Gas? Discuss the concept of Gas in terms of Ethereum Blockchain. (07)
 (b) What is Forking in Blockchain? Explain Hard fork and Soft fork with an example. (07)
- Q.4** (a) Differentiate MainNet and TestNet. (07)
 (b) Discuss the Smart Contract compilation process in the Solidity language (07)
- OR**
- (a) Differentiate int and uint data types in the solidity language. (07)
 (b) Discuss setter and getter functions in the solidity programming language. (07)
- Q.5** Attempt any **SEVEN** out of **TWELVE**:
Define the following Terms: (14)
- (1) Airdrop
 - (2) SEGWIT
 - (3) Genesis block
 - (4) Immutable
 - (5) Pure
 - (6) Hot wallet
 - (7) Nonce
 - (8) Dapps
 - (9) Smart Contract
 - (10) Constructor
 - (11) Remix
 - (12) Metamask