4/31

1604E227

Candidate's Seat No :_____

B.Sc. Sem.-6 Examination

SE-311

Computer Science (A)

April-2025

Time : 2-30 Hours] **[Max. Marks : 70**

Q:1 Write following **[14]**

(a) Explain the backstory of Blockchain and how it evolved over time.

(b) Compare and contrast centralized vs. decentralized systems with examples.

OR

(a) Describe the different layers of Blockchain and their functionalities.

(b) Discuss the importance of Blockchain and its impact on various industries.

Q:2 Write following **[14]**

(a) Explain the fundamental principles of Blockchain and how it works.

(b) Discuss the role of cryptography in Blockchain security.

OR

(a) Explain the relevance of game theory in Blockchain and its consensus mechanisms.

(b) Explain how cryptography, game theory, and computer science integrate to form Blockchain.

Q:3 Write following **[14]**

(a) Describe the role of computer science engineering in Blockchain technology.

(b) Describe the Ethereum ecosystem and its role in decentralized applications (DApps).

OR

(a) List and explain major Blockchain applications in different domains.

(b) Discuss the challenges in scaling Blockchain and possible solutions.

(P.T.O)

E227-2

Q:4 Write following **[14]**

(a) Explain the history of money and how it led to the creation of Bitcoin.

(b) Describe the transition from early digital currencies to Bitcoin.

OR

(a) Explain the transition from Bitcoin to Ethereum and why Ethereum was introduced.

(b) Describe the Ethereum Blockchain and how it differs from Bitcoin.

Q:5 Attempt any SEVEN (14)

1 Blockchains can be categorized as _____ and decentralized systems.

2 The three major layers of blockchain are _____, consensus, and application.

3 Cryptographic technique used to ensure data integrity in blockchain is called _____.

4 In blockchain, each block contains a _____ of the previous block.

5 _____ theory helps explain rational decision-making and incentives in blockchain networks.

6 SPV stands for _____.

7 EVM stands for _____.

8 Bitcoin transactions are stored in a public ledger called the _____.

9 Ethereum smart contracts are written in the programming language _____.

10 Bitcoin wallets store _____ which are used to sign transactions.

11 A full node stores the complete copy of the blockchain ledger. (True/False)

12 In Ethereum, smart contracts can be altered once deployed on the blockchain. (True/False)

1604E227-3

Candidate's Seat No : _____

B.Sc. Sem.-6 Examination
SE-311
Computer Science (B)
April-2025

Time : 2-30 Hours] **[Max. Marks : 70**

Q.1 Write the following

i) Explain computer security models. 07

ii) Explain security in E-commerce. 07

OR

i)What is security attacks?Explain with types. 07

ii) Explain network security . 07

Q.2. Write the following

i)Explain VPN concepts & limitations. 07

ii)Explain web threats and attack in detail. 07

OR

i)Explain conventional encryptions. 07

ii)Explain public key cryptography 07

Q.3.Write the following

i)What is cryptography ? Explain with types in detail. 07

ii) Give the difference between private and public key. 07

OR

i)What is encryption? Explain in detail. 07

ii)Explain confidentiality and integrity policies. 07

Q.4. Write the following

i)Explain firewall and its types. 07

ii)Explain any one asymmetric algorithm in detail. 07

OR

i)Explain web security requirement in detail 07

ii)Explain firewall design principles. 07

(P.T.O)

E227-H

Q.5. Attempt any seven out of twelve :- 14

i) Define information security.

ii) Define threats.

iii) What is CIA?

iv)What is network security?

v)What is firewall?

vi)What is the use of Digital certificates?

vii)What are types of security ?

viii)Define encryption.

ix) _____ platforms are used for safety and protection of information in the cloud.
a) Cloud workload protection platforms
b) Cloud security protocols
c) AWS
d) One Drive

x) Lack of access control policy is a _____
a) Bug
b) Threat
c) Vulnerability
d) Attack

xi) . Which of the following information security technology is used for avoiding browser-based hacking?
a) Anti-malware in browsers
b) Remote browser access
c) Adware remover in browsers
d) Incognito mode in a browser

xii) From the options below, which of them is not a threat to information security?
a) Disaster
b) Eavesdropping
c) Information leakage
d) Unchanged default password

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