

(03 Hours)

Total Marks : 80

Note:

- 1) Question No 1 is Compulsory.
- 2) Answer any three from the remaining questions.
- 3) Assume suitable data wherever required.

- Q1.** Solve any four of the following (20)
- a. What are the advantages and disadvantages of NFT investments?
 - b. What differentiates STOs from other token offerings, and how do they enhance investor protections?
 - c. Explain the risks associated with Decentralized Finance.
 - d. Discuss how NFTs can be used in shaping the virtual economies of the metaverse?
 - e. How does 51% attack impact the security and decentralization of the network?
- Q2. a** Explain the steps involved in creating and minting of NFTs in OpenSea. (10)
- b.** What is ERC1155? Functions of ERC-1155 and Discuss the benefits of Token ERC-1155 for NFTs? (10)
- Q3. a** Explain DeFi layered Architecture with neat diagram (10)
- b.** Describe any 4 potential applications of NFT. (10)
- Q4. a** Explain the steps involved in the process of tokenization, from selecting an asset to issuing digital tokens on a blockchain. (10)
- b.** Explain the advantages of DeFi apps over traditional financial services. (10)
- Q5. a** How is the Eclipse attack executed, and what are the subsequent actions carried out by the attacker? (10)
- b.** Explain how Flash loan works with a use case and how it is different from collateral based loan? (10)
- Q6.** Write short notes on any four of the following. (20)
- a. DEX Aggregator
 - b. Selfish Mining attack and its prevention
 - c. Compound (COMP) App
 - d. DAICO and how is it different from an ICO?
 - e. DeFi Insurance

Duration: 3hrs

[Max Marks: 80]

N.B. : (1) Question No 1 is Compulsory.

(2) Attempt any three questions out of the remaining five.

(3) All questions carry equal marks.

(4) Assume suitable data, if required and state it clearly.

- 1 Attempt any **FOUR** [20]
- a What is blockchain and the core principle of Blockchain?
 - b Explain the significance of tracking and recording a product's journey in supply chain management
 - c Identify and elaborate on the challenges financial institutions encounter in implementing robust Know Your Customer (KYC) procedures.
 - d Discuss the potential of streamlining clinical trial processes through innovative technologies.
 - e Explain the concept of peer-to-peer energy trading facilitated by blockchain technology among prosumers.
- 2 a Provide examples of technologies or platforms used for supplier verification and credential validation. [10]
- b Discuss how blockchain can streamline processes, reduce fraud, improve compliance, and minimize duplication of efforts in these areas [10]
- 3 a Discuss the "FabRec" platform and its implications for enhancing transparency, efficiency, and trust in pharmaceutical supply chains. [10]
- b Identify and discuss the challenges healthcare organizations face in securely storing and sharing patient records while ensuring data integrity, interoperability, and patient privacy. [10]
- 4 a Discuss how blockchain can facilitate demand response, grid balancing, and asset management in energy grids. [10]
- b Explain the concept of blockchain-based smart contracts and their application in automating rental agreements. [10]
- 5 a Explain the mechanisms through which Web3 operates, including peer-to-peer networking, consensus algorithms, and cryptographic techniques. [10]
- b Explore the role of IoT-based medical delivery drones in revolutionizing healthcare logistics and improving patient access to medical supplies. [10]
- 6 a Evaluate the potential benefits and challenges of adopting blockchain technology in property title management, rental agreements, and cyber-physical systems. [10]
- b Define Web2 and Web3 and highlight the fundamental differences between the two. [10]

(3 Hours)

[Total Marks: 80]

- Note:** 1. Assume suitable data wherever necessary
2. Figure to the right indicates Full Marks
3. Question no.1 is Compulsory and answer any 03 Questions from Remaining

Q-1: Answer any 4 (5 marks Each)

(20)

- What are different Challenges of AI enabled Digital Forensics?
- Describe in brief the Four Levels of Crime Divisions in Crime
- What are the purposes and objectives of crime scene examinations?
- What is meant by crime linking and the various forms of linking
- List out different methods of Recovery of Different Types of Evidence and explain them in brief.
- Describe in brief different models/ Framework of intelligent automation in digital forensics.

Q.2 A. Describe following Machine Learning Processes

(10)

- Data Collection and Preprocessing,
- Training and Testing Phases

B. What is meant by intelligent assets? Explain following asset mechanisms in brief.

(10)

- Intelligence Assets,
- Knowledge Assets,
- System Assets.

Q3. A. Describe the 'crime triangle' model and the concept of the fourth factor 'evidence' to secure detection and prosecution

(10)

B. Explain in brief about different best practices in the main forensic evidence types

(10)

Q4. A. Describe Automatic fingerprint identification system and their characteristics used in forensic evidence

(10)

B. What are different Inhibitors to the effective uses of crime scene forensic recoveries

(10)

Q5. A. Explain different methods of dealing with Crime Scenes.

(10)

B. Describe importance of Instrument (Tool) Marks for the purpose of recovery of evidence

(10)

Q6. A. Explain method of using Glass as sample for evidence recovery. How do you deal with Suspects, by using Hair Combings?

(10)

B. What is difference between AI and Automation? Describe role of AI in Automation.

(10)

[Duration: 3hrs]

[Max Marks: 80]

N.B. : (1) Question No 1 is Compulsory.

(2) Attempt any three questions out of the remaining five.

(3) All questions carry equal marks.

(4) Assume suitable data, if required and state it clearly.

- 1 Attempt any FOUR [20]
- What is Metaverse? Explain why Metaverse is the heart of Web 3.0?
 - Write a note on necessary hardware and infrastructure for Metaverse.
 - Justify the role of IoT to bridge the gap between physical world and internet.
 - List the characteristics of Metaverse.
 - What is difference between virtual reality and Metaverse.
- 2 a Explain the various building blocks of Metaverse. [10]
- b Explain different shapes of Metaverse with example. [10]
- 3 a Explain potential working of ERC721 NFT in detail. [10]
- b List different platforms involved in the Metaverse. Explain with example and applications. [10]
- 4 a Explain how fashion industry is disrupted by the Metaverse? Explain. [10]
- b Explain pros and cons of buying NFTs for Metaverse. [10]
- 5 a How to use MetaMask to access Decentral and owning land to have direct access of Metaverse? Explain. [10]
- b How to create avatar for Metaverse? Explain with example [10]
- 6 Write short note on: (any two) [20]
- NFT for Metaverse: Need, virtual assets, and unlocking
 - Challenges and opportunities of Metaverse
 - Asset classes inside Metaverse

Duration: 3hrs

Max Marks: 80

- N.B. : (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.

- 1 Attempt any FOUR [20]
- a Explain the use of mobile computing as digital driver of digital economy
 - b What is the primary goal of the digital application or digital infrastructure?
 - c What are the pillars of e-commerce network?
 - d State and Explain opportunities & Challenges in Digital Business
 - e Explain digital signature.
- 2 a Explain key business processes that the ERP system will support? [10]
- b Explain how B2B-E-commerce-selling and buying in private e-markets. [10]
- 3 a What do you mean by digital business infrastructure? Name the different hardware and software that are used in the e-infrastructure. [10]
- b Explain legal societal and ethics impact of E commerce. [10]
- 4 a Explain in detail what are the most prevalent security threats to e-businesses today? [10]
- b Explain digital certificate in detail. [10]
- 5 a Explain how does the e-business strategy align with the overall business vision and mission? [10]
- b Describe how Amazon used data analytics to enhance its business: [10]
- 6 a Explain what is the key action steps required to implement our e-business strategy? [10]
- b What is business plan? Why it is required in any business organization? [10]

(Time: 3 Hours)

(Total Marks: 80)

Note:

1. Question No.1 is compulsory
2. Attempt any **three** out of the remaining **Five** questions.
3. Assume suitable data if necessary.

- Q. 1.** Answer **any FOUR** of the following: (20)
- (a) Define Environmental Objective as per ISO 14001
 - (b) What are the challenges in implementation of ISO 14000 standards?
 - (c) Unawareness or ignorance of environmental protection will lead to detrimental consequence comment. Justify the statement.
 - (d) Write short note on Global Warming as a Global Environmental Concern.
 - (e) Discuss on Applications of Environmental Management System..
 - (f) Discuss the key success factors for applied to almost all the operation for EMS implementation.
- Q. 2.** (a) What is Water (P & CP) Act? Give its objectives. (10)
- (b) Discuss in short about Environment Protection Act. (10)
- Q. 3.** (a) Discuss roles of Government as regulatory agency for Environmental Management. Enlist 3 points. (10)
- (b) Explain limiting factors and carrying capacity as related to Ecosystems. (10)
- Q. 4.** (a) What is Total Quality Environment Management Concept? (10)
- (b) How is CSR related to Environmental Management? Explain with an example. (10)
- Q. 5.** (a) Elaborate the ISO 14001 EMS Model for Municipalities. (10)
- (b) Discuss in short about EMS certification. (10)
- Q. 6.** Answer the following (20)
- (a) Discuss on Wildlife protection Act.
 - (b) What are the guidelines to conduct and Environmental audit?