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**PRESIDENCY UNIVERSITY**

**BENGALURU**

**SCHOOL OF MANAGEMENT**

**Summer Term End Term Examinations, August 2024**

**Date**: 06.08.2024

**Time**: 1:00PM-4:00PM

**Max Marks**: 100

**Weightage**: 50%

**Winter Semester**: 2023-24

**Course Code**: BBB3027/ MGI268

**Course Name**: Block chain Analytics

**Program & Sem**: VI

**Instructions:**

1. *Read the all questions carefully and answer accordingly.*
2. *Do not write any matter on the question paper other than roll number.*

**Part A**

**Answer any 5 Questions. Each question carries 2 marks. (5Qx 2M= 10M)**

1. What is one key feature of decentralized exchanges that can be beneficial when integrated into a hybrid cryptocurrency exchange platform? (C.O.1)

2. What does UTXO stand for in the context of cryptocurrency transactions? (C.O.1)

3. Explain one key advantage of the UTXO model in cryptocurrency transactions. (C.O.2)

4. List one advantage of using a Web3 Data API over a command-line tool for data extraction in building a decentralized application (dApp). (C.O.2)

5. What is one challenge of ensuring GDPR compliance in blockchain applications? (C.O.2)

6. Give one reason why off-chain data storage might be preferred for handling large volumes of data on blockchain platforms.

7. What specific goal would you prioritize when choosing between the account/balance model and the UTXO model for a blockchain project focused on privacy? (C.O.2)

**Part B**

**Answer any 5 Questions. Each question carries 10 marks. (5Qx10M=50M)**

8. Examine the efficiency of the UTXO model in relation to other transaction models utilized in cryptocurrencies. Discuss the advantages and disadvantages.

(C.O.2)

9. Conduct a comparative analysis of the account/balance model and the UTXO model in their approach to managing cryptocurrency transactions. What are the implications of these differences for transaction efficiency and security?

(C.O.2)

10. Examine the fundamental attributes of both centralized and decentralized exchanges, identifying elements that can be integrated into a hybrid cryptocurrency exchange platform. What are the potential benefits and challenges of combining these features?

(C.O.3)

11. Evaluate in detail the strengths and limitations of using a combination of LSTM and GRU neural networks in a hybrid model for predicting cryptocurrency prices. What specific aspects of each model contribute to the overall performance?

(C.O.3)

12. Examine the distinct objectives of a blockchain initiative (e.g., scalability, privacy, user-friendliness) and identify the critical factors that impact the decision between the account/balance model and the UTXO model. What criteria would you use to make this determination?

(C.O.4)

13. Examine the benefits and drawbacks of using a Web3 Data API versus a command-line tool for data extraction in the context of decentralized application development. Consider factors such as scalability, real-time data access, and security in your evaluation.

(C.O.4)

14. Analyze the impact of integrating external databases with blockchain data on the analytical capabilities of blockchain applications. What specific enhancements can this integration bring to data analysis and decision-making processes?

(C.O.4)

**Part C**

**Answer any 2 Questions. Each question carries 20 marks. (2Qx20M=40M)**

15. Evaluate the effectiveness of combining real-time parsing with two-step analysis in a blockchain-based supply chain tracking system. Discuss the benefits and potential drawbacks of this dual approach in terms of efficiency, accuracy, and scalability.

(C.O.3)

16. Evaluate the benefits and drawbacks of repeated analysis versus one-off analysis in blockchain environments. Discuss how these approaches impact computational resources, data accuracy, and their suitability for various industrial use cases.

(C.O.4)

17. Analyze the potential implications of GDPR and the “Right to Be Forgotten” on blockchain applications that integrate personal data. What are the specific challenges these regulations pose to the immutable nature of blockchain? (C.O.4)