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**PRESIDENCY UNIVERSITY**

**Bengaluru**

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| **End - Term Examinations – JANUARY 2025** |
| **Date:** 13-01-2025 **Time:** 09.30 am – 12.30 pm |

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| --- | --- | --- |
| **School:** SOCSE | **Program:** B. Tech (CBC) | |
| **Course Code:** CSE2020 | **Course Name:** Blockchain Technology and Applications | |
| **Semester**: V | **Max. Marks**: 100 | **Weightage**: 50% |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CO - Levels** | **CO1** | **CO2** | **CO3** | **CO4** |
| **Marks** | **26** | **26** | **24** | **24** |

**Instructions:**

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

**Part A**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Answer ALL the Questions. Each question carries 2marks. 10Q x 2M=20M** | | | | |
| **1** | Define Digital Signature in blockchain technology. | **2 Marks** | **L1** | **CO1** |
| **2** | Define Incentives for blockchain technology. | **2 Marks** | **L1** | **CO1** |
| **3** | Describe Proof of Work algorithm. | **2 Marks** | **L2** | **CO1** |
| **4** | Define transactions in Bitcoin. | **2 Marks** | **L1** | **CO2** |
| **5** | Define P2P network. | **2 Marks** | **L1** | **CO2** |
| **6** | State “Halving” concepts in bitcoin. | **2 Marks** | **L2** | **CO2** |
| **7** | Explain Genesis block. | **2 Marks** | **L2** | **CO3** |
| **8** | Define Gas in EVM. | **2 Marks** | **L1** | **CO3** |
| **9** | Describe Chain code in blockchain technology. | **2 Marks** | **L2** | **CO4** |
| **10** | Describe Cure coin. | **2 Marks** | **L2** | **CO4** |

**Part B**

|  |  |  |  |  |  |
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| **Answer the Questions Total 80 Marks.** | | | | | |
| **11.** | **a.** | Describe types of storage mechanisms available in blockchain. | **10 Marks** | **L2** | **CO1** |
|  | **b.** | Demonstrate the security issues of Online Wallets. | **10 Marks** | **L2** | **CO1** |
| **or** | | | | | |
| **12.** | **a.** | Describe Hot and Cold Storage of blockchain wallets. | **10 Marks** | **L2** | **CO1** |
|  | **b.** | Explain the data structure used to store data in blockchain. | **10 Marks** | **L2** | **CO1** |
|  |  |  |  |  |  |
| **13.** | **a.** | Define the Bitcoin works in blockchain technology. | **10 Marks** | **L1** | **CO2** |
|  | **b.** | Explain how to improve the Bitcoin network. | **10 Marks** | **L2** | **CO2** |
| **or** | | | | | |
| **14.** | **a.** | List the tasks of miners and explain in detail. | **10 Marks** | **L1** | **CO2** |
|  | **b.** | Illustrate the Pay Per Share model in detail. | **10 Marks** | **L2** | **CO2** |

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| **15.** | **a.** | Explain The process of key generation in Ethereum. | **10 Marks** | **L2** | **CO3** |
|  | **b.** | Explain Block header component of an Ethereum block. | **10 Marks** | **L2** | **CO3** |
| **Or** | | | | | |
| **16.** | **a.** | Describe function modifiers in EVM in detail. | **10 Marks** | **L2** | **CO3** |
|  | **b.** | Demonstrate the solidity data structures and explain in detail. | **10 Marks** | **L2** | **CO3** |

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| **17.** | **a.** | Differentiate permissioned & permissionless blockchains. | **10 Marks** | **L2** | **CO4** |
|  | **b.** | List the areas to be improved for building an effective supply chain system. | **10 Marks** | **L1** | **CO4** |
| **Or** | | | | | |
| **18.** | **a.** | Demonstrate the benefits of adopting blockchain in the automobile industry. | **10 Marks** | **L2** | **CO4** |
|  | **b.** | List the benefits of adopting blockchain in healthcare. | **10 Marks** | **L1** | **CO4** |

**\*\*\*\*\* BEST WISHES \*\*\*\*\***