B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

August 2024 Supplementary Examinations

Programme: B.E.   **Semester: VII**
Branch: Computer Science and Engineering   **Duration: 3 hrs.**
Course Code: 21CS7PEBLC   **Max Marks: 100**
Course: Block Chain

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

UNIT - I

1   a) Illustrate the steps used in Digital signature scheme.   **4**

    b) Explain Turing Complete with an example and discuss blockchain applications are Turing Complete.   **6**

    c) With a neat diagram discuss architecture and goals of Hadoop distributed file system.   **10**

UNIT - II

2   a) Explain distributed consensus.   **4**

    b) Explain the life of the transaction in blockchain application with an example.   **6**

    c) Differentiate between Blockchain and Database. List any 5 blockchain use cases.   **10**

OR

3   a) Explain Mining mechanism used in blockchain.   **4**

    b) With a neat diagram explain structure of Bitcoin blockchain.   **6**

    c) Analyze why blockchain forks. Explain different types of forks with example.   **10**

UNIT - III

4   a) Discuss Ethereum Wallet with an example. Explain how to create wallet, the different ethereum networks available, using wallet and view all the transactions.   **10**

    b) With a neat diagram explain ethereum state trie architecture and block header.   **10**

OR

5   a) In solidity what is Contract definition and syntax of functions. Explain the set of all keywords that specify the function's visibility and affect the behavior of the function.   **10**

b) Explain the different predefined global variables(objects) that can be accessed when a contract is executed in the EVM. **10**

UNIT - IV

6   a) Consider the kind of attack used in DAO hack, discuss the vulnerability and preventative techniques of such attack. **10**

b) Discuss how blockchain solves problems in current DNS systems, workings of a blockchain DNS and list any three of popular blockchain DNS software. **10**

UNIT - V

7   a) Compare and discuss the methods to reduce energy consumption in blockchain. **10**

b) Write the Python implementation of simplified Proof-of-Work algorithm. **10**

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