Seventh Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
Block Chain Technology

Time: 3 hrs.   Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Define Block Chain. With the neat diagram explain the Network view of a block chain.
                                                                            (07 Marks)
   b. Explain the different types of block chain.   (08 Marks)
   c. Mention the benefits and limitations of block chain.   (05 Marks)

OR

2 a. Explain the methods that are used to achieve decentralization.   (04 Marks)
   b. Describe the Decentralized organizations in block chain.   (06 Marks)
   c. Define the following :
      i) Decentralization   ii) Centralized systems   iii) Distributed systems
      iv) Atomicity   v) Cap theorem.   (10 Marks)

Module-2

3 a. Discuss about the cryptographic hash functions and its properties.   (10 Marks)
   b. Write a note on Merkle trees.   (05 Marks)
   c. What is double-spending problem? How to overcome this problem in crypto currency?
                                                                            (05 Marks)

OR

4 a. Discuss about the distributed consensus protocol with an example.   (07 Marks)
   b. Explain the incentive mechanisms used in Bitcoin.   (06 Marks)
   c. Explain the three important properties of hash puzzles.   (07 Marks)

Module-3

5 a. Illustrate the concept on Bitcoin transactions long with its syntax. (07 Marks)
   b. Explain how to execute a script in a stack-based programming language. (06 Marks)
   c. Summarize the applications of Bitcoin scripts.   (07 Marks)

OR

6 a. Explain hot and cold storage for Bitcoin along with its solutions, in detail. (10 Marks)
   b. Discuss about the payment service for Bitcoin in detail. Also explain its steps involved in Bitcoin Mines.   (10 Marks)

Module-4

7 a. Discuss the tasks involved in bitcoin miners.   (10 Marks)
   b. Explain the mining incentives and strategies to be followed by miners. (10 Marks)

OR

8	a.	Explain the functions of decentralized mixing in Bitcoin.	(05 Marks)
	b.	Discuss in detail how to De-anonymize Bitcoin.	(10 Marks)
	c.	Write a note on Zerocoin.	(05 Marks)

Module-5

9	a.	Define Smart Contract. Explain the properties of Ricardian contract Bowtie model with a neat diagram.	(08 Marks)
	b.	Explain Etherenum block chain with a state transition function.	(06 Marks)
	c.	Explain the types of accounts for ethereum.	(06 Marks)

OR

10	a.	Write a note on precompiled contracts.	(08 Marks)
	b.	Explain EVM (Ethereum Virtual Machine) with a neat diagram.	(08 Marks)
	c.	Mention the various functions of the Iterator functions.	(04 Marks)

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