

Practice Session-2

TCS332 Fundamental of information security and blockchain

Last date of submission: 05 December 2023, 4.00 PM

Submission type: Hand-written sheets

Maximum Marks: 100

Instructions:

- * All questions are compulsory to attend.
- * The students must provide the answers in the form of the hand-written sheets.
- * Any cheating or copying of answers will result in zero marks.
- * Each question carries ten marks.

Q1: Explain the guidelines of the zero trust model. Where can we apply this model?

Q2: What is penetration testing? What are the different steps of penetration testing?

Q3: Differentiate among the following categories of hackers:

Black hat hackers, white hat hackers, grey hat hackers.

Q4: Explain the following approaches to effective cyber security:

Confidentiality, integrity, availability, authentication, and access control.

Q5: Explain the different architecture models of distributed systems. Which one is more applicable for the implementation of blockchain and why?

Q6: What is a blockchain? Explain the different types of blockchains along with their uses.

Q7: Examine the security of a private blockchain.

Q8: What are the different components of a block used in the blockchain? Draw the figure of a block. Which field is used for which purpose? Provide the approximate size (in bits) for these components.

Q9: How would you compare the following types of consensus algorithms?

Proof-of-Stake, Proof-of-Capacity, Proof-of-Weight.

Q10: What is Paxos? What are the different defined roles in Paxos? What are the uses of these roles?