

M.Sc. DEGREE EXAMINATION – APRIL 2024
INFORMATION TECHNOLOGY
FOURTH SEMESTER

COURSE : ELECTIVE
PAPER : ADVANCED TECHNOLOGIES
SUBJECT CODE : 19CS/PE/AT15
TIME : 3 HOURS **MAX. MARKS: 100**

SECTION – A

ANSWER ALL THE QUESTIONS: **10 x 2 = 20**

1. Define the term “Perceptron” in neural networks.
2. State the feature of a well-trained artificial neural network.
3. What are the four major types of deep networks?
4. Define Recursive Neural Networks.
5. How does a Bitcoin transaction works?
6. Define full blockchain nodes in Bitcoin.
7. Write down the four processes of the Bitcoin’s de-centralized consensus.
8. What is meant by “51% attack” against the consensus mechanism?
9. Define the term “circuit” in quantum model computation. Draw its diagram.
10. What is Composition of Systems Postulate?

SECTION – B

ANSWER ANY SIX OF THE FOLLOWING: **6 x 5 = 30**

11. Discuss on the different activation functions.
12. Write a short note on building blocks of Deep Networks.
13. What is Bitcoin Mining? Explain in detail.
14. Write about the Bitcoin security methods.
15. Elaborate about the quantum computational model.
16. Define Loss Function in machine learning. Elucidate about the loss functions for regression.
17. Explain the technique of bloom filtering is carried out in Bitcoin.
18. What is meant by parameter tuning? Explain about different hyperparameters used in neural networks.

SECTION – C

ANSWER ANY FIVE OF THE FOLLOWING: **5 x 10 = 50**

19. Write the back propagation algorithm.
20. Discuss on the CNN architecture.
21. Explain Bitcoin Wallets and their types.
22. Elaborate the Structure of a Block in Blockchain.
23. Write about the linear algebra model of Quantum Computation.
24. Explain in detail about Merkle trees and Simplified Payment Verification in Blockchain.
25. Discuss on the common architectural principles of Deep Networks.
