

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2024

MTech-I Semester (ECE)

COURSE CODE (CREDITS): 21M1WEC149

MAX. MARKS: 35

COURSE NAME: Computational Intelligence and Applications

COURSE INSTRUCTORS:

MAX. TIME: 2 Hours

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q.No	Question	Marks
Q1	Compare and contrast the key concepts of Artificial Intelligence (AI) and Computational Intelligence (CI). Provide examples of real-world applications for each.	4
Q2	Explain the concept of fuzzification in detail. How does it differ from traditional crisp logic?	4
Q3	Discuss the limitations of traditional feedforward neural networks in handling sequential data. How do recurrent neural networks address these limitations?	6
Q4	Critically analyze the challenges and potential solutions for applying evolutionary algorithms to real-world optimization problems.	6
Q5	Evaluate the potential of swarm intelligence algorithms for solving real-world optimization problems.	5
Q6	Describe the architecture of a typical neuro-fuzzy system, such as an Adaptive Neuro-Fuzzy Inference System (ANFIS).	5
Q7	Discuss the impact of factors like overfitting, underfitting, and computational complexity on the performance of hybrid systems.	5