GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR
(GIET UNIVERSITY)
Ph.D. (First Semester) Examinations, December – 2024
23SPPECA1011 – Introduction to Intelligent System
(CSA)

Time: 3 hrs   Maximum: 70 Marks

The figures in the right hand margin indicate marks.

	Answer *ANY FIVE* Questions.	(14 x 5 = 70 Marks)	Marks
1.a.	What do you mean by Intelligent system? How does it work?		8
b.	Discuss several types of reasoning techniques used in AI?		6
2.a.	Explain the centroid method for defuzzification. With an example in which you defuzzify a system with three fuzzy set.		8
b.	Two fuzzy proposition are given as		6

P: The temperature is high

Q: The velocity is low

With the fuzzy truth value T (P) =0.7, T (Q) =0.6

Find the truth value of the proposition when the temperature is high and velocity is low.

3.a.	Explain the concept of recurrent neural network and their significance in modelling sequential data.		8
b.	Discuss the biological relevance of recurrent connection in the context of information processing in the brain.		6
4.a.	Investigate the challenges and limitations associated with the biological foundation of ANN.		8
b.	Discuss issues such as overfitting , vanishing gradients and the trade off between biological inspiration and computational efficiency.		6
5.a.	Ex[plain the concept of semantic network and conceptual graph as knowledge representative structures.		7
b.	How do these graphical representations model relationships and hierarchies in knowledge domains?		7
6.a	Explain the principles of Bayesian reasoning in the context of Uncertainty.		7
b.	How does Bayesian inference handle uncertain information and update beliefs based on new evidence?		7
7.a	Explore the integration of machine learning techniques in knowledge representation.		7
b.	How are machine learning algorithms being used to automatically acquire, refine and extend knowledge base?		7

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