R20

Code No: R20A6604

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech I Semester Supplementary Examinations, April 2025

Soft Computing

(B.Tech-AIML)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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			BCLL	CO(s)	Marks
		SECTION-I			
1	***A***	Brief about Soft Computing Methods in detail.	**L1**	**CO-I**	**[7M]**
	B	What do you understand by soft computing? Explain its feasible characteristics.	**L1**	**CO-I**	**[7M]**
		OR			
2	***A***	Differentiate between the problem solving strategies: Soft computing and Hard computing.?	**L3**	**CO-I**	**[7M]**
	B	Describe the following: i) Scope of Soft Computing ii) objective of Soft Computing iii) Functions of Soft Computing	**L2**	**CO-I**	**[7M]**
		SECTION-II			
3	***A***	Write a short note on fuzzy sets and its operations.	**L1**	**CO-II**	**[7M]**
	B	What is an empty Fuzzy set and What do you mean by height of a Fuzzy set?	**L1**	**CO-II**	**[7M]**
		OR			
4	***A***	Explain fuzzy control systems in detail.	**L2**	**CO-II**	**[7M]**
	B	Write about cardinality of a Fuzzy set? Whether a power set can be formed for a fuzzy set?	**L1**	**CO-II**	**[7M]**
		SECTION-III			
5	***A***	Explain in detail various components of "Fuzzy Decision Making".	**L2**	**CO-III**	**[7M]**
	B	State and explain about Mathematical model in Particle Swarm Optimization (PSO).	**L4**	**CO-III**	**[7M]**
		OR			
6		Explain about Particle Swarm Optimization Algorithm with applications and example.	**L5**	**CO-III**	**[14M]**
		SECTION-IV			
7	***A***	Explain various applications of genetic algorithm in detail.	**L4**	**CO-IV**	**[7M]**
	B	Mention the various types of cross-over and mutation techniques.	**L1**	**CO-IV**	**[7M]**
		OR			
8	***A***	Outline the advantages of genetic algorithm over conventional algorithms?	**L6**	**CO-IV**	**[7M]**
	B	Explore the use of crossover operator in GA?	**L4**	**CO-IV**	**[7M]**

SECTION-V

9	***A***	List and explain various applications of Rough Set Theory.	**L4**	**CO-V**	**[7M]**
	B	Write short notes about the following of Rough Set Theory i) Reduction of Attributes ii)Dependency of Attributes	**L1**	**CO-V**	**[7M]**
		OR			
10	***A***	Explain about Integration of Soft Computing Techniques.	**L2**	**CO-V**	**[7M]**
	B	Discuss about algorithm of Reduct Calculation in Rough Set Theory.	**L5**	**CO-V**	**[7M]**

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