BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION MO2023)

CLASS: BTECH **SEMESTER : V**
BRANCH: ALL (OE) **SESSION : MO2023**

SUBJECT: IT361 BASICS OF INTELLIGENT COMPUTING

TIME: 02 Hours **FULL MARKS: 25**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4*. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates**

			CO	BL
Q.1(a)	What are the properties of Artificial Intelligence? Why we need highly efficient and intelligent computing system?	[2]	1	BL1
Q.1(b)	Explain briefly about 8-puzzle problem.	[3]	1	BL2
Q.2(a)	Suggest application of artificial intelligence (AI) indicating the preceptor, environment, actuator, and performance measure	[2]	2	BL1
Q.2(b)	Explain briefly about Greedy best-first search algorithm with the help of example.	[3]	1	BL1
Q.3(a)	Explain the terms union, intersection, support, and alpha cut in relation to fuzzy sets using suitable examples.	[2]	2	BL1
Q.3(b)	Explain briefly about fuzzy inference system with the help diagram.	[3]	2	BL1
Q.4(a)	What do you mean by travailing salesman problem? Explain it.	[2]	1	BL1
Q.4(b)	Let R and S be two fuzzy relation defined here:	[3]	2	BL3

		y1	y2	y3
R=	x1	0.0	0.2	0.8
	x2	0.3	0.6	1.0

		z1	z2	z3
S=	y1	0.3	0.7	1.0
	y2	0.5	1.0	0.6
	y3	1.0	0.2	0.0

Compute the result of R o S using max-min composition.

Q.5(a)	What do you mean by cross over and mutation in Genetic algorithm? Explain it with the help of example.	[2]	2	BL1
Q.5(b)	Maximize the function f(x) = $\mathbf{(x+2)^2}$, Where x is permitted to vary between 0 and 31 using genetic algorithm by considering four members initial population.	[3]	2	BL3

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