

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: BTECH/BARCH
BRANCH: ARCH/ECE/CHE/BIO/MECH

SEMESTER : VI
SESSION : SP/2023

SUBJECT: CS363 ARTIFICIAL INTELLIGENCE FUNDAMENTALS

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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Q.1(a)	Define AI. Elaborate Tic-Tac-Toe problem.	[5]	1 1
Q.1(b)	Describe structure of agent. Illustrate Goal Based agent and Learning Agent with example	[5]	1 2
Q.2(a)	Describe the working of Simulated Annealing Search. Also explain Local Beam Search	[5]	2 4
Q.2(b)	With help of the tree explain the process involved in Mini Max Search and Alpha-Beta pruning.	[5]	2 5
Q.3(a)	List various inferencing techniques. Describe each of them with example.	[5]	3 5
Q.3(b)	What are the components of a typical expert system? How are they related to each other? Make a diagram and explain.	[5]	3 8
Q.4(a)	Describe Goal Stack planning and Hierarchical planning.	[5]	4 9
Q.4(b)	Explain the following with respect to Natural language processing: a. Semantic analysis b. Pragmatic analysis	[5]	5 8
Q.5	Using Genetic algorithm , maximize the following function $F(x) = x^2$ Where x is permitted to vary between 0 and 31.	[10]	5 9

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