

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

**CLASS: MTECH  
BRANCH: CSE**

**SEMESTER : I  
SESSION : MO/2024**

**SUBJECT: CS512 ARTIFICIAL INTELLIGENCE**

**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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		CO	BL
Q.1(a)	What is “Artificial Intelligence and Artificial Intelligence Technique”? Describe the following types of intelligent agents (a) Goal based agent (b) Utility based agent (c) Learning agent	[5] 2,3	1,2,3
Q.1(b)	What is production system? Define the problem as State Space Search and enumerate different issues in the design of search program.	[5] 2,3	3,4
Q.2(a)	Discuss the following search Technique with the help of an example: (a) Breadth First Search (b) Depth First Search	[5] 1,2,4	3,4
Q.2(b)	Discuss the Hill Climbing Search and Simulated Annealing Search.	[5] 1,2,4	3,4
Q.3(a)	Describe the different approaches and issues of knowledge representation	[5] 1,2,3	1,2
Q.3(b)	Given: (1) Every soldier is strong-willed. (2) All who are strong-willed and sincere will succeed in their career. (3) Indira is a soldier. (4) Indira is sincere.  Prove:  Will Indira succeed in her career?	[5] 3,4	4,5
Q.4(a)	Describe different components of Planning System. Discuss Goal Stack Planning and Hierarchical Planning.	[5] 2,3	1,2,3
Q.4(b)	Describe different forms of learning. What is Inductive and Explanation Based Learning?	[5] 2,3	2,3,4
Q.5(a)	Describe briefly: (a) Syntactic Processing (b) Semantic Analysis (c) Pragmatic Processing.	[5] 3,4	2,3,4
Q.5(b)	Describe the robot hardware and illustrate the robotic software architecture.	[5] 3,4	2,3,4

:::20/11/2024:::E