Code No: 155DY **R18**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, January/February - 2023
ARTIFICIAL INTELLIGENCE
(Common to CESE, CSE(CS), CSE(DS))

Time: 3 Hours **Max. Marks: 75**

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

1.a)	What is intelligent agent?	[2]
b)	Explain about uniform cost search.	[3]
c)	What is constraint propagation?	[2]
d)	Explain about alpha-beta pruning.	[3]
e)	What is backward chaining?	[2]
f)	Differentiate between unification and lifting.	[3]
g)	Give definition of classical planning.	[2]
h)	Explain about multi agent planning.	[3]
i)	What is uncertain knowledge?	[2]
j)	What are the different forms of learning?	[3]

PART – B

(50 Marks)

2.a)	Explain about greedy best-first search technique.	
b)	What simulated annealing search? Explain.	[5+5]
	OR	
3.a)	Discuss about A* search and Bidirectional search techniques.	
b)	Explain in detail about online search agents.	[5+5]
4.a)	What are knowledge based agents? How can a knowledge-based agent be described at three levels?	
b)	Give ontological and epistemological commitments of a propositional logic.	[5+5]
	OR	
5.a)	Define constraint satisfaction problem and explain the backtracking search for CSPs.	
b)	What is Adversarial Search? Explain adversarial search techniques.	[5+5]
6.a)	Write about resolution in first order logic.	
b)	What is Ontological engineering? Explain.	[5+5]
	OR	
7.a)	Explain the semantics of first order logic in knowledge representation.	
b)	Explain about backward chaining in first order logic.	[5+5]

8. List and explain different classical planning approaches. [10]

OR

9.a) Explain forward state space search with an example.
b) Discuss about hierarchical planning with an example. [5+5]

10.a) Discuss in brief about Dempster-Shafer theory.
b) How to represent knowledge in an uncertain domain? Explain. [5+5]

OR

11.a) Explain Bayes' rule and its uses.
b) Discuss in brief about explanation-based learning. [5+5]

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