मोतीलाल नेहरू राष्ट्रीय प्रौद्योगिकी संस्थान इलाहाबाद
प्रयागराज–211004 भारत
Motilal Nehru National Institute of Technology Allahabad
Prayagraj-211004 [India]

Computer Science & Engineering Department
Mid Semester (Odd) Examination 2022-2023

Programme Name: B.Tech./~~M.Tech./MBA/M.Sc/MCA~~ Semester: 1st

Course Code: Course Name: Introduction to AI and ML

Branch: CSE / ECE Student Reg. No.:

Duration: 1:30 hr Max. Marks: 20

Instructions:

1. *Figures to the right indicate the full marks.*
2. *Write very pin point answers. Any extra rubbish detail will lead to marks deduction*
3. *Draw diagram where necessary*

			Marks
Q 1	a	State the characteristics of an Artificial Intelligence system.	2
	b	Analyze the time requirement for breadth-first search, when the search space depth is d=10 and the branching factor b=10.	2.5
	c	Compute the Manhattan distance for the given initial state. **Initial state:** 1 5 8 3 2 4 6 7 **Goal state:** 1 2 3 4 5 6 7 8	2.5
	d	Write the algorithm for simple Hill climbing search.	3
Q 2	a	Explain the Depth First Search strategy. Discuss its drawback(s).	3
	b	How AND-OR graphs are used in problem reduction? Explain with an example.	3
	c	Differentiate between propositional logic and predicate logic. Represent the following in predicate logic: i.) All kings are persons. ii.) John likes all kinds of foods. iii.) Some men are genius. iv.) Everyone is loyal to someone.	4