Name: **Enrolment No:**	

UPES

End Semester Examination, December 2023

Course: Algorithm for Intelligent Systems and Robotics **Semester:** V

Program: B.Tech CSE (AIML) **Time** : 03 hrs.

Course Code: CSAI3010 **Max. Marks: 100**

Instructions:

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	Define Intelligent System. List down four examples of intelligent systems.	**4**	**CO1**
Q 2	Write down the laws of robotics.	**4**	**CO1**
Q 3	Discuss computational theory of intelligent system.	**4**	**CO1**
Q 4	Write down three widely used simulators for simulating a robot in ROS.	**4**	**CO3**
Q 5	Differentiate between depth cameras and visual cameras	**4**	**CO2**
	SECTION B **(4Qx10M= 40 Marks)**		
Q 6	Explain Depth First Search (DFS) algorithm with example.	**10**	**CO1**
Q 7	Draw and explain the hierarchical paradigm of a robotic system.	**10**	**CO1**
Q 8	Explain speech recognition and synthesis.	**10**	**CO3**
Q 9	Discuss ROS. Explain the file system level of ROS. OR Explain the architecture of ROS navigation stack.	**10**	**CO3**
	SECTION-C **(2Qx20M=40 Marks)**		
Q 10	A. Explain the architecture of the multiple principal component (MPC) fuzzy neural network. B. Explain the working of Optoelectronic and SONAR Sensors.	**10x2= 20**	**CO2**

	OR A. Explain architecture for intelligent control system. B. Draw and explain the basic architecture of Neural Network Model.		
Q 11	Draw the architecture and elaborate the Machine Vision System.	**20**	**CO2**