

Name:	 UPES UNIVERSITY WITH A PURPOSE
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2019

Course: Computer Aided Manufacturing – Robotics Engineering

Semester: VIII

Program: B. Tech. CS + MI

Course Code: CSEG 433

Instructions: Attempt all the questions

Time 03 hrs.

Max. Marks: 100

SECTION A (20 Marks)

S. No.	Questions	Marks	CO
Q 1	Summarize the classifications of CNC machines.	04	CO1
Q 2	Write all the steps of BFS algorithm. Explain with an example.	04	CO1
Q 3	Define Artificial Intelligence. What are its applications?	04	CO2
Q 4	What do you mean by encoders? Explain rotary and linear encoders	04	CO1
Q 5	Discuss any two heuristic search techniques with example.	04	CO2

SECTION B (40 Marks)

Q 6	Illustrate 8 queen problem. Draw state space tree for 4 queen problem.	10	CO2
Q 7	Briefly describe logistic regression.	10	CO2
Q 8	Explain robot kinematics with an example.	10	CO3
Q 9	Describe Principle Component Analysis in brief. <p style="text-align: center;">OR</p> Discuss about goal stack algorithm with an example.	10	CO1

SECTION-C (40 Marks)

Q 10	Explain all the steps of Naïve Bayes classifier. What are the merits and demerits of Naïve Bayes Classifier?	20	CO2
Q 11	Restate the three layer architecture implementation in advanced robotics. <p style="text-align: center;">OR</p> Classify optoelectronic sensors with its types.	20	CO3

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SECTION A (20 Marks)

S. No.	Questions	Marks	CO
Q 1	What do you mean by decision tree? Explain decision tree induction.	04	CO2
Q 2	Discuss knowledge presentation. What are its characteristics?	04	CO1
Q 3	Write two merits and demerits of Naïve Bayesian Classifier.	04	CO2
Q 4	Define search paradigm and its importance in robotics.	04	CO3
Q 5	Explain all the steps of KNN algorithm with example.	04	CO2

SECTION B (40 Marks)

Q 6	Describe Computer-Aided Manufacturing.	10	CO1
Q 7	What do you mean by Process Plan Development? Explain	10	CO1
Q 8	Illustrate rule-based machine learning system? Explain.	10	CO2
Q 9	Write the differences between standard gradient and stochastic gradient descent. OR Define inverse kinematics? Why it is complex?	10	CO3

SECTION-C (40 Marks)

Q 10	Classify optoelectronic sensors with its types.	20	CO3
Q 11	Briefly explain the three layer architecture implementation in advanced robotics. OR Explain tool condition monitoring system.	20	CO2