

Name:	
Enrolment No:	

**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**End Semester Examination, December 2019**

<b>Course: B.Tech CSE</b> <b>Program: BAO /GG</b> <b>Course Code: CSAI3004</b>	<b>Semester: 6th</b> <b>Time 03 hrs.</b> <b>Max. Marks: 100</b>
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**SECTION A**

- 1. Each Question will carry 5 Marks**  
**2. Instruction: Write short answer**

S. No.		Marks	CO
<b>Q 1</b>	Differentiate between Supervised and Unsupervised Machine Learning?	<b>5</b>	<b>CO4</b>
<b>Q2</b>	Suppose the propositions P and Q stand for these statements about the world: P: It is raining outside. Q: The pavement is wet.  What would be the compound propositions stand for these statements about the world:  It is not raining outside. It is raining outside and the pavement is wet. It is raining outside or the pavement is wet. If it is raining outside, then the pavement is wet. It is raining outside if and only if the pavement is wet.	<b>5</b>	<b>CO1</b>
<b>Q3</b>	Name the quantifiers and connectives of first order logic.	<b>5</b>	<b>CO2/CO1</b>
<b>Q4</b>	How artificial intelligence is linked to cognitive science?	<b>5</b>	<b>CO1</b>
<b>Q5</b>	How can one find the overfitting in a network?	<b>5</b>	<b>CO2</b>
<b>Q6</b>	Analyze the working of Single layer perceptron?	<b>5</b>	<b>CO1</b>

**SECTION B**

- 1. Each question will carry 10 marks**  
**2. Instruction: Write short / brief notes**

<b>Q 7</b>	Differentiate between monotonic logic and non-monotonic logic.	<b>10</b>	<b>CO4</b>
<b>Q8</b>	What are the different types of Machine Learning techniques? Explain with example.  <b>OR</b>  Name and describe the main features of Genetic Algorithms (GA).	<b>10</b>	<b>CO4</b>
<b>Q9</b>	What is 'training Set' and 'test Set' in a Machine Learning Model? How much data will you allocate for training, validation, and test Sets?	<b>10</b>	<b>CO4</b>
<b>Q10</b>	Analyze Bayes theorem in context of development of Bayesian belief networks which are frequently used in Artificial Intelligence.	<b>10</b>	<b>CO3</b>
<b>Q11</b>	Define a Knowledge based system and explain its architecture?  <b>OR</b>  Define Bayesian networks and explain the markov condition in the networks.	<b>10</b>	<b>CO3/CO2</b>

**SECTION-C**

- 1. Each Question carries 20 Marks.**  
**2. Instruction: Write long answer.**

<b>Q12</b>	What is a decision tree? Explain the working of ID3 algorithm in context of a classification problem.  <b>OR</b>  Explain Reinforced learning? Analyze the working of Multi-armed bandit algorithms?	<b>20</b>	<b>CO3/CO2</b>
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