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**NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Machine Learning, ML (course)**


Register for  
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Course  
outline

How does an  
NPTEL  
online  
course  
work? ()

**Week 1:  
Introduction  
to the  
Machine  
Learning  
course ()**

- ☒ Introduction to the Machine Learning Course (unit? unit=16&lesson=17)
- ☒ Foundation of Artificial Intelligence and Machine Learning (unit? unit=16&lesson=18)
- ☐ Intelligent Autonomous Systems and

# Week 1 : Assignment 1

Your last recorded submission was on 2023-02-04, 15:58 Due date: 2023-02-08, 23:59 IST. IST

- 1) Which answer is the most appropriate description of the concept of Recursion **1 point**
  - ☐ the reduction of the solution to a problem into a sequence of solutions to sub-problems
  - ☐ the reduction of the solution to a problem into a parallel solutions to sub-problems
  - ☒ the decomposition of a problem into sub-problems followed by the solution of these sub-problems
  - ☐ the reduction of the solution to a problem into the the same form of solutions to sub-problems
- 2) Which is the most appropriate description of the concept of Tensor ? **1 point**
  - ☐ A matrix with vectors as components
  - ☒ A multidimensional table that is a n-dimensional generalization of scalars, vectors and matrices
  - ☐ A matrix with more and two dimensions
- 3) Which is the most appropriate characterization of a Hamiltonian graph? **1 point**
  - ☐ A graph that can be drawn in a plane without any edges crossed
  - ☒ A graph for which exists a closed path that traverses the vertices of the graph exactly once
  - ☐ A graph for which exists a closed path that traverses the edges of the graph exactly once
- 4) Which is the most appropriate characterization of the concept of Convolution? **1 point**
  - ☐ The recursive application of several functions on an argument
  - ☒ A mathematical operation which when applied to two functions ( $f$  and  $g$ ) produces a function.



Artificial Intelligence  
(unit?  
unit=16&lesson=19)

☐ Applications of Machine Learning (unit?  
unit=16&lesson=20)

☒ Lecture Notes (unit?  
unit=16&lesson=21)

☒ Further Reading Material (unit?  
unit=16&lesson=22)

☒ **Quiz: Week 1 : Assignment 1 (assessment? name=97)**

☐ Week 1 Feedback form : Machine Learning, ML (unit?  
unit=16&lesson=23)

**Week 2: Characterization of Learning Problems ()**

**Week 3 : Forms of Representation ()**

**Lecture Notes ()**

**Text Transcripts ()**

**Download Videos ()**

**Lecture notes ()**

☐ An integral where the bounds are functions

5) Which is the most appropriate characterization of a Multivariate function **1 point**

- ☐ a function with properties defined by another function
- ☐ a function that assumes two or more values for at least one argument value
- ☒ a function of more than one variable

6) Which is the most appropriate characterization of the concept of Regression? **1 point**

- ☒ A technique for estimating relationships between variables
- ☐ A technique for inferring causes from effects
- ☐ A technique for reducing compounds onto components

7) Who pioneered work on Computer Vision in 1957? **1 point**

- ☒ Marvin Minsky
- ☐ Ray Solomonoff
- ☐ Oliver Selfridge
- ☐ John Holland
- ☐ Herbert Simon
- ☐ Frank Rosenblatt

8) Who coined the term Machine Learning in 1959? **1 point**

- ☐ Marvin Minsky
- ☐ John McCarthy
- ☐ Allen Newell
- ☒ Arthur Samuel
- ☐ Herbert Simon
- ☐ Frank Rosenblatt

9) To which category of search strategies does Depth First Search belong? **1 point**

- ☒ Brute-Force Search Strategies
- ☐ Informed (Heuristic) Search Strategies
- ☐ Local Search Algorithms

10) In knowledge representation, the collections of definitions of basic entities and their relationships for a specific domain is referred to by a specific term. Which term? **1 point**

- ☐ Epistemology
- ☒ Ontology
- ☐ Phenomenology

11) The 'Logic Theorist' developed in 1955 has been called 'The first Artificial Intelligence Program'. Which of the early AI scientist was one of the co-developers. **1 point**

- ☐ Marvin Minsky



- ☐ John McCarthy
- ☐ John Holland
- ☒ Allen Newell

12) On which calculus did John McCarthy base the LISP programming language?

**1 point**

- ☐ FUNCTIONAL CALCULUS
- ☐ DIFFERENTIAL CALCULUS
- ☒ LAMBDA CALCULUS

13) What is MINIMAX?

**1 point**

- ☐ A Decision Rule that maximizes the potential win in a best case scenario
- ☒ A Decision Rule that minimizes the potential loss in a worst case scenario
- ☐ A Decision Rule that optimizes the balance potential loss and potential win in worst and best cases

14) What do you call a function that estimates the cost of a path from the current node in a search graph to the closest goal node?

**1 point**

- ☐ MINIMALISTIC
- ☐ OPPORTUNISTIC
- ☒ HEURISTIC

You may submit any number of times before the due date. The final submission will be considered for grading.

**Submit Answers**

