What is Machine Learning (ML)? *

- ○ The autonomous acquisition of knowledge through the use of manual programs
- ◉ The autonomous acquisition of knowledge through the use of computer programs
- ○ The selective acquisition of knowledge through the use of computer programs
- ○ The selective acquisition of knowledge through the use of manual programs

Which among the following is not a necessary feature of a reinforcement learning solution to a learning problem? *

- ◉ Representation of the problem as a Markov Decision Process
- ○ Exploration versus exploitation dilemma
- ○ Learning based on rewards
- ○ Trial and error approach to learning

What is true regarding backpropagation rule? *

- ○ It is also called generalized delta rule
- ○ Error in output is propagated backwards only to determine weight updates
- ○ There is no feedback of signal at nay stage
- ◉ All of the mentioned

Which of the following would be the leave on out cross validation accuracy for k=5? *

- ○ 6/14
- ○ 4/14
- ◉ None of the mentioned
- ○ 2/14

What is the algorithm that falls under Reinforcement Learning ? *

- ○ Decision Tree Learning
- ◉ Q- Learning Algorithm
- ○ Both of the above
- ○ None of the above

In FIND- S Algorithm the search space moves from; *

- ◉ From most specific to more general
- ○ From most general to most specific
- ○ Can be in either way
- ○ None of the above

Computational complexity of classes of learning problems depends on which of the following? *

- ◉ The size or complexity of the hypothesis space considered by learner
- ○ The accuracy to which the target concept must be approximated
- ○ The probability that the learner will output a successful hypothesis
- ○ All of these

What strategy is used by ID3 Algorithm? *

- ○ Information Gain Heuristic and Hill Climbing
- ○ Only Hill Climbing
- ○ Only Information Gain
- ◉ None of the above

What is the value of Target function in Nearest neighbor? *

- ○ Variable with discrete value
- ○ Variable with real value
- ◉ Variable with either a discrete value or real value
- ○ None of the above

What are the two main properties of a Random Variable? *

- ○ Variance and Bias
- ◉ Mean and Variance
- ○ Mean and Bias
- ○ Error and Bias

Let A be an example, and C be a class. The probability P(C|A) is known as: *

- ◉ Apriori probability
- ○ Aposteriori probability
- ○ Class conditional probability
- ○ None of the above

Epochs represent the total number of. *

- ○ Network nodes.
- ○ Passes of the test data through the network.
- ◉ Passes of the training data through the network.
- ○ Input layer nodes.

What is termed as Well Posed Learning Problem ? *

- ○ If a unique solution to that problem exists
- ○ If a solution exits but not unique
- ◉ If a unique solution exists and the solution depends on some experience
- ○ None of the above

Bayesian networks allow compact specification of *

- ◉ Joint probability distributions
- ○ Conditional independence
- ○ Propositional Logic statements
- ○ Belief

For Naive Bayes Model which of the following statements is true? *

- ○ It is not suitable for classification task.
- ◉ It requires reasonable accuracy in rank ordering of probability values to classify a new observation.
- ○ Denominator in Naïve Bayes Formula (probability computation) impacts the rank ordering of probability values.
- ○ All of the above

What is the basic condition for FIND- S Algorithm? *

- ◉ It deals with most specific hypothesis and considers only positive examples
- ○ It deals with most general hypothesis and considers only negative examples
- ○ All of the above
- ○ None of the above

What is the output released by Perceptron in Neural network when the result is greater than some threshold value? *

- [x] 1
- [ ] -1
- [ ] 0
- [ ] None of the above

Which of the following is not type of learning? *

- [x] Semi-unsupervised Learning
- [ ] Supervised Learning
- [ ] Reinforcement Learning
- [ ] Unsupervised Learning

Which of the following is a widely used and effective machine learning algorithm based on the idea of bagging? *

- [ ] Decision Tree
- [x] Random Forest
- [ ] Regression
- [ ] Classification

Features of Reinforcement learning *

- [ ] Set of problem rather than set of techniques
- [ ] RL is training by reward and
- [ ] RL is learning from trial and error with the
- [x] All of these

Bayesian network are
: *

- ○ Locally structured
- ◉ Fully structured
- ○ Partial structured
- ○ All of the mentioned

Which of the following machine learning algorithm can be used for imputing missing values of both categorical and continuous variables? *

- ○ Logistic Regression
- ○ Linear Regression
- ◉ K-NN

Which of the following statements about the Naïve Bayes is incorrect? *

- ◉ Attributes are statistically dependent on one another given the class value.
- ○ Attributes can be nominal or numerical
- ○ Attributes are equally important.
- ○ Attributes are statistical independent of one another given the class value.

Where does the Bayes rule can be used? *

- ◉ Answering probabilistic query
- ○ Solving queries
- ○ Increasing complexity
- ○ Decreasing complexity

Choose from the following that are Decision Tree nodes? *

- ○ Decision Nodes
- ○ End Nodes
- ○ Chance Nodes
- ◉ All of the mentioned

Which of the following is a hierarchical clustering algorithm? *

- ○ Single linkage clustering
- ◉ K-means clustering
- ○ DBSCAN
- ○ None of the above

What is needed to make probabilistic systems feasible in the world? *

- ○ Reliability
- ◉ Crucial robustness
- ○ Feasibility
- ○ None of the mentioned

Which of the following will be Euclidean Distance between the two data point A(1,3) and B(2,3)? *

- ○ 4
- ○ 2
- ○ 8
- ◉ 1

Neural Networks are complex _____ with many parameters. *

- ○ Nonlinear Functions
- ◉ Linear Functions
- ○ Exponential Functions
- ○ Discrete Functions

A _____ is a decision support tool that uses a tree-like graph or model of decisions and their possible consequences, including chance event outcomes, resource costs, and utility. *

- ◉ Decision tree
- ○ Neural Networks
- ○ Trees
- ○ Graphs

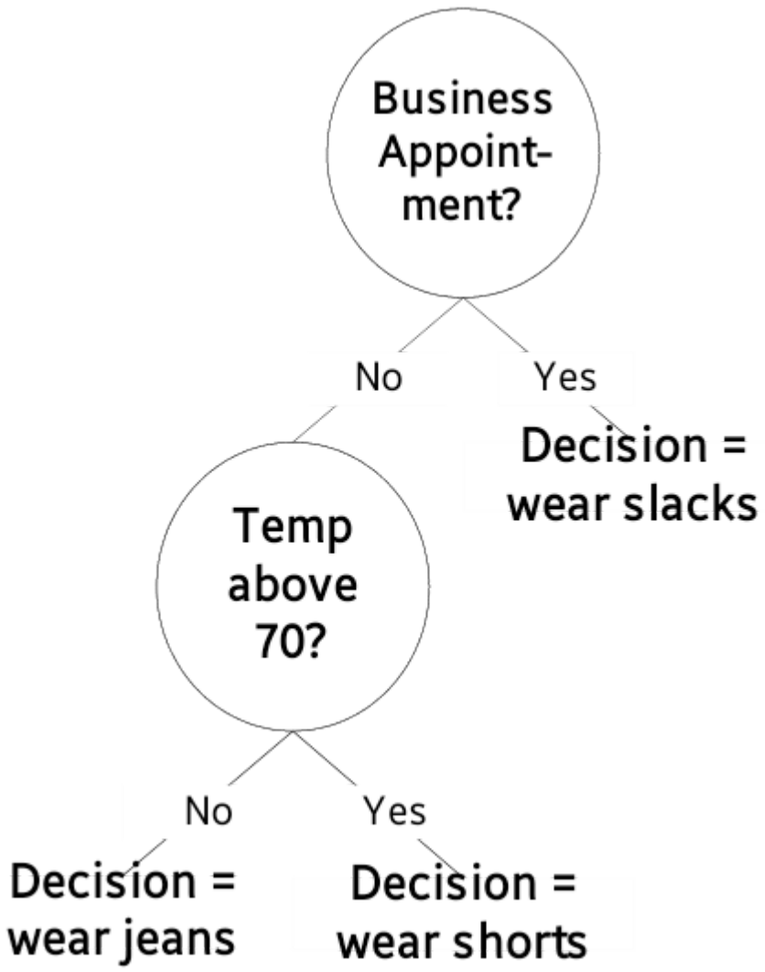
What is/are the problem solving methods for RL? *

- ○ Dynamic programming
- ○ Monte Carlo Methods
- ○ Temporal-difference learning
- ◉ All of these

How the compactness of the Bayesian network can be described? *

- ○ Partial structure
- ◉ Locally structured
- ○ All of the mentioned
- ○ Fully structured

Which of the following is a valid production rule for the decision tree below? *



- (●) IF Business Appointment= No & Temp above 70 = No THEN Decision = wear jeans
- ( ) IF Business Appointment = Yes & Temp above 70 = Yes THEN Decision = wear shorts
- ( ) IF Temp above 70 = No THEN Decision = wear shorts
- ( ) IF Business Appointment = No & Temp above 70 = No THEN Decision = wear slacks

The quality of the result depends on (LWR) Locally Weighted Regression *

- ( ) Choice of the function
- ( ) Choice of the kernel function K
- ( ) Choice of the hypothesis space H
- (●) All of these

Features of Reinforcement learning *

- ○ Set of problem rather than set of techniques
- ○ RL is training by reward and
- ○ RL is learning from trial and error with the
- ◉ All of these

High entropy means that the partitions in classification are *

- ○ Not pure
- ◉ Pure
- ○ Useless
- ○ Useful

Which rule is used to minimize the squared error between network output values and the target values for this output? *

- ○ Delta rule
- ◉ Gradient descent rule
- ○ Back propagation rule
- ○ None of the above

How many terms are required for building a Bayes model? *

- ○ 1
- ○ 4
- ◉ 3
- ○ 2

Why is the XOR problem exceptionally interesting to neural network researchers? *

- [x] Because it is the simplest linearly inseparable problem that exists.
- [ ] Because it can be expressed in a way that allows you to use a neural network
- [ ] Because it can be solved by a single layer perceptron
- [ ] Because it is complex binary operation that cannot be solved using neural networks

Which Hypothesis is considered to best hypothesis in Genetic Algorithm ? *

- [x] Hypothesis that optimizes a predefined numerical measure for the problem at hand, called the hypothesis Fitness
- [ ] Hypothesis which is general in nature
- [ ] Hypothesis that is specific in nature

What is the key idea behind CANDIDATE ELIMINATION ALGORITHM ? *

- [x] Output a set of all hypothesis that are consistent with the training example
- [ ] Output a set of general hypothesis
- [ ] Output a set of Specific hypothesis
- [ ] None of the above

In genetic algorithm process of selecting parents which mate and recombine to create off-springs for the next generation is known as *

- [ ] Fitness sharing
- [ ] Tournament selection
- [x] Parent selection
- [ ] Rank selection

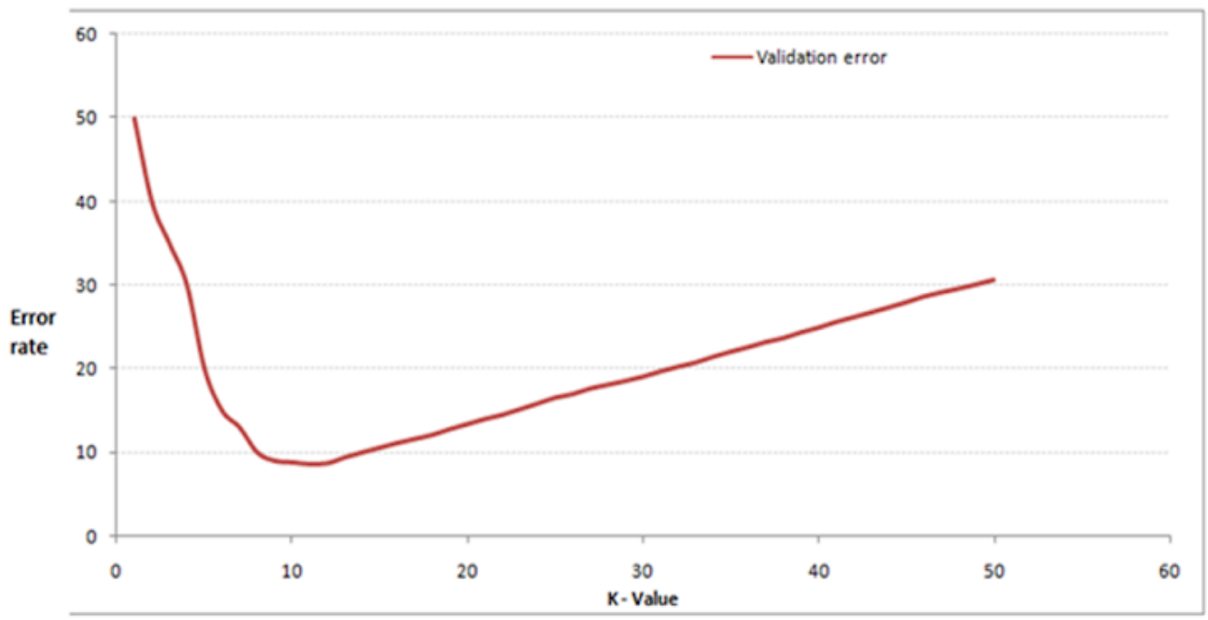
A statement made about a population for testing purpose is called? *

- (●) Hypothesis
- ( ) Test-Statistic
- ( ) Statistic
- ( ) Level of Significance

When you find noise in data which of the following option would you consider in k-NN *

- (●) I will increase the value of k
- ( ) None of these
- ( ) Noise can not be dependent on value of k
- ( ) I will decrease the value of k

In the image below, which would be the best value for k assuming that the algorithm you are using is k-Nearest Neighbor. *



- (●) 10
- ( ) 3
- ( ) 50
- ( ) 20