Program: BE Computer Engineering

Curriculum Scheme: Revised 2012

Examination: Fourth Year Semester VIII

Course Code: CPE8031 and Course Name: Machine Learning

Time: 1 hour Max. Marks: 50

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Note to the Students: - All the Questions are compulsory and carry equal marks.

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| Q1.  | Which of the following is NOT supervised learning? |
| Option A: | Decision Tree |
| Option B: | Linear Regression |
| Option C: | Naïve Bayesian |
| Option D:  | PCA |
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| Q2. | Which of the following statements about Naïve Bayes is INCORRECT? |
| Option A: | Attributes are equally important. |
| Option B: | Attributes are statistically dependent of one another given the class value. |
| Option C: | Attributes are statistically independent of one another given the class value. |
| Option D: | Attributes can be nominal or numeric.  |
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| Q3. | High entropy means that the partition in classification are\_\_\_\_\_\_ |
| Option A: | Pure |
| Option B: | Not pure |
| Option C: | Useful |
| Option D: | Useless |
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| Q4. |  Which of the following is NOT part of Feature engineering> |
| Option A: | Selection of features |
| Option B: | Extraction of features |
| Option C: | Creation of features |
| Option D: | Deletion of features |
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| Q5. | Which of the following sentence is FALSE regarding Regression? |
| Option A: | It relates Input and Outputs |
| Option B: | It is used for prediction |
| Option C: | It may be used for interpretation |
| Option D:  | It discovers causal relationship |
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| Q6. | Reinforcement learning is an aspect of machine learning where\_\_\_\_\_ |
| Option A: | We don’t give target to our model while training  |
| Option B: | We find out some very useful relations between parameters of a large data set |
| Option C: | An agent learns to behave in an environment by performing certain actions and observing the rewards which it gets from those actions. |
| Option D:  | It contains noisy data, missing value or unknown data |
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| Q7.  | The learning process in which system can learn incrementally by providing all the available data as instance and then learn on the fly is called as\_\_\_\_\_ |
| Option A: | Online learning |
| Option B: | Batch learning |
| Option C: | Instance based learning |
| Option D:  | Model based learning |
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| Q8.  | What is decision tree? |
| Option A: | Flow chart |
| Option B: | Structure in which internal node represents test on an attribute, each branch represents outcome of test and each leaf node represent class label |
| Option C: | Flow chart and structure in which internal node represents test on an attribute, each branch represent outcome of test and each leaf node represent class label |
| Option D:  | Graph with internal node |
|  |  |
| Q9. | Decision Nodes are represented by\_\_\_ |
| Option A: | Disks |
| Option B: | Squares |
| Option C: | Circles |
| Option D:  | Triangles |
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| Q10.  | End node are represented by\_\_\_\_\_\_\_ |
| Option A: | Disks |
| Option B: | Squares |
| Option C: | Circles |
| Option D:  | Triangles |
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| Q11.  | Which of the following uses decision tree algorithm? |
| Option A: | Unsupervised learning |
| Option B: | Reinforcement learning |
| Option C: | Supervised learning |
| Option D:  | Semi-supervised learning |
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| Q12.  | Which of the following is FALSE about Decision tree? |
| Option A: | We can represent any Boolean function on discrete attributes using the decision tree. |
| Option B: | It can be useful to solve both regression and classification problem |
| Option C: | We cannot represent Boolean function on discrete attribute |
| Option D: | We assume whole training set as a root |
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| Q13. | \_\_\_\_\_\_\_\_\_\_ is a metric to measure how often a randomly chosen element would be incorrectly identified. |
| Option A: | Gini Index |
| Option B: | Entropy |
| Option C: | Information Gain |
| Option D:  | Spit on feature |
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| Q14.  | Which of the following parameter is NOT part of Kernelized Support vector classifier? |
| Option A: | He ‘D’ parameter |
| Option B: | The ‘C’ parameter |
| Option C: | Gamma |
| Option D:  | The kernel |
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| Q15. | What is objective of back propagation algorithm? |
| Option A: | To develop learning algorithm for multilayer feedforward neural network |
| Option B: | To develop learning algorithm for single layer feedforward neural network |
| Option C: | To develop learning algorithm for multilayer feedforward neural network so that network can trained to capture the mapping implicitly |
| Option D:  | To develop learning algorithm for double layer neural network |
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| Q16.  | Which of the following is advantage of Backpropagation rule? |
| Option A: | Scaling |
| Option B: | Slow convergence |
| Option C: | Local minima problem |
| Option D:  | Pattern mapping |
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| Q17. | Where does the Bayesian Rule is used? |
| Option A: | Solving Query |
| Option B: | Increasing complexity |
| Option C: | Decreasing complexity |
| Option D: | Answering probabilistic query  |
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| Q18. | Where does Hidden Markov Model is used? |
| Option A: | Speech recognition |
| Option B: | Understanding of real world |
| Option C: | Both speech recognition and understanding of real world |
| Option D:  | In reality model |
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| Q19.  | Which of the following is NOT required by K-means clustering? |
| Option A: | Defined distance metric |
| Option B: | Number of clusters |
| Option C: | Initial guess as to cluster centroids |
| Option D:  | Euclidean distance |
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| Q20. | Which of the following is finally produced by Hierarchical clustering? |
| Option A: | Final estimate of cluster centroids |
| Option B: | Tree showing how close things are to each other |
| Option C: | Assignment of each point to clusters |
| Option D: | Distance metric |
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| Q21. | Which of the following is two main components of Dimensionality Reduction? |
| Option A: | Principal and Linear analysis |
| Option B: | Feature selection and Extraction |
| Option C: | Generalized and component analysis |
| Option D:  | Filtering and Generalizing |
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| Q22.  | \_\_\_\_ is an incredibly powerful tool for analyzing data. |
| Option A: | Linear Regression |
| Option B: | Logistic Regression |
| Option C: | Gradient Decent |
| Option D:  | Greedy Algorithms |
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| Q23. | If Linear regression model is perfect that is train error is zero then\_\_\_\_\_\_\_\_  |
| Option A: | Test error is also always zero |
| Option B: | Test error is non zero |
| Option C: | Couldn’t comment on test error |
| Option D:  | Test error is equal to Train error |
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| Q24.  | In order to calculate confidence intervals and hypothesis tests, it is assumed that the errors are independent and normally distributed with mean zero and \_\_\_\_\_\_\_ |
| Option A: | Mean |
| Option B: | Variance |
| Option C: | SD |
| Option D:  | KNN |
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| Q25. | Supervised Learning differs from unsupervised learning in that supervised learning requires\_\_\_\_\_\_\_\_\_ |
| Option A: | At least one input attribute |
| Option B: | Input attributes to be categorical |
| Option C: | At least one output attribute |
| Option D:  | Output attributes to be categorical |