

KATHMANDU UNIVERSITY
End Semester Examination [C]
June, 2018

Marks Scored:

Level : B.E. /B.Sc.

Year : IV

Exam Roll No. :

Time: 30 mins.

Course : COMP 484

Semester: I

F. M. : 10

Registration No.:

Date JUN 17 2018

SECTION "A"

[20 Q. \times 0.5 = 10 marks]

Circle the most appropriate answer.

1. A computer program is said to learn from experience E with respect to some task T and some performance measure P if its performance on T, as measured by P, improves with experience E. Suppose we feed a learning algorithm a lot of historical weather data, and have it learn to predict weather. In this setting, what is T?
 - a. The process of the algorithm examining a large amount of historical weather data.
 - b. The weather prediction task
 - c. The probability of it correctly predicting a future date's weather
 - d. None of these
2. Suppose you are working on weather prediction, and use a learning algorithm to predict tomorrow's temperature (in degrees Centigrade/Fahrenheit). What is this problem basically?
 - a. Regression
 - b. Classification
 - c. Clustering
 - d. All of these
3. Which of these is a reasonable definition of machine learning?
 - a. Machine learning is the field of allowing robots to act intelligently
 - b. Machine learning is the science of programming computers
 - c. Machine learning learns from labeled data
 - d. Machine learning is the field of study that gives computers the ability to learn without being explicitly programmed.
4. What do clustering algorithms do?
 - a. An exponential of the inputs is found
 - b. Inputs are multiplied
 - c. Inputs are divided into groups
 - d. Sets are multiplied
5. Higher value of entropy would mean which of the following:
 - a. Attributes of instances belong to mixed class of values
 - b. Attributes of instances belong to just one class of values
 - c. Attributes of instances cannot be related to any class of values
 - d. None of the above
6. Entropy values range from:
 - a. 0 to 1
 - b. 0 to 100
 - c. -1 to +1
 - d. 1 to 10

7. While selecting effective attributes that impact target attribute, the objective is to analyze attributes which could:
 - a. Increase overall entropy value
 - b. Decrease overall entropy value
 - c. First increase and then decrease the overall entropy value
 - d. None of the above

8. Which of the following algorithms represent 'lazy' machine learning method?
 - a. ID3
 - b. Naïve Bayes
 - c. Radial basis functions
 - d. K-Nearest Neighbor

9. Which of the following is not a continuous variable?
 - a. Age
 - b. Temperature
 - c. Weather
 - d. Salary

10. Which of the following is able to approximate any continuous function to an arbitrary accuracy?
 - a. A two-layer neural network (input layer, output layer) using a linear activation function
 - b. A two-layer neural network (input layer, output layer) using a non-linear activation function.
 - c. A three-layer neural network (input layer, hidden layer, output layer) using a linear activation function.
 - d. A three-layer neural network (input layer, hidden layer, output layer) using a non-linear activation function.

11. Which of the following holds true for variance in the estimate?
 - a. The smaller the set of test examples, the greater the expected variance.
 - b. The larger the set of text examples, the greater the expected variance.
 - c. The smaller the set of test examples, the lesser the expected variance.
 - d. None of the above.

12. Which of the following is not a supervised machine learning algorithm?
 - a. ID3
 - b. Naïve Bayes
 - c. K-Nearest Neighbor
 - d. K-Means

13. The k-fold cross-validation assumes:
 - a. For k different iterations, use k-1 sub folds of data for testing and 1 sub fold for training.
 - b. For k different iterations, use k-1 sub folds of data for training and 1 sub fold for testing.
 - c. Use 80% of the data for training and 20% of the data for testing
 - d. None of the above.

14. The process of forming general concept definitions from examples of concepts to be learned:
 - a. Deduction
 - b. Abduction
 - c. Induction
 - d. Conjunction

15. Data mining is best described as the process of:
 - a. identifying patterns in data
 - b. deducing the relationships in data
 - c. representing data
 - d. simulating trends in data

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16. Computers are best at learning:
a. Facts b. Concepts c. Procedures d. Principles
17. A nearest-neighbor approach is best used:
a. With large-sized datasets
b. When irrelevant attributes have been removed from the data
c. When a generalized model of the data is desirable.
d. When an explanation of what has been found is of primary importance.
18. Another name for an output attribute
a. Predictive variable b. Independent variable
c. Estimated variable d. Dependent variable
19. The single best representative of a class:
a. mean b. centroid c. signature d. prototype
20. The average positive difference between computed and desired outcome values.
a. root mean squared error b. mean squared error
c. mean absolute error d. mean positive error

