(6 Pages)

Reg. No. : .....

Code No. : 10337 E **Sub. Code : AACS 41**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2023.

Fourth Semester

Computer Science — Allied

MACHINE LEARNING

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Father of Machine Learning (ML)

(a) Geoffrey Chaucer

(b) Geoffrey Hill

(c) Geoffrey Everest Hinton

(d) Charles

2. _____ algorithms enable the computers to learn from data, and even improve themselves, without being explicitly programmed.

(a) Deep learning

(b) Machine learning

(c) Artificial intelligence

(d) Fortran

3. Machine learning algorithms build a model based on sample data, known as _____

(a) Training data (b) Transfer data

(c) Data training (d) Fact data

4. What characterize unlabeled examples in machine learning?

(a) there is no prior knowledge

(b) there is no confusing knowledge

(c) there is prior knowledge

(d) there is plenty of confusing knowledge

5. The problem of finding hidden structure in unlabeled data is called _____

(a) supervised learning

(b) unsupervised learning

(c) reinforcement learning

(d) e-learning

6. Supervised learning and unsupervised clustering both require which is correct according to the statement

(a) output attribute (b) hidden attribute

(c) input attribute (d) categorical attribute

7. Which of the following methods do we use to find the best fit line for data in Linear Regression?

(a) Least square error (b) Maximum likelihood

(c) Logarithmic loss (d) Zero square error

8. Common classes of problems in machine learning is ———

(a) clustering (b) regression

(c) classification (d) all of the above

9. Which of the following is a disadvantage of decision trees?

(a) Decision trees are prone to be overfit

(b) Decision trees are robust to outliers

(c) Factor analysis

(d) Business analysis

10. If machine learning model output involves target variable then that model is called as ———

(a) descriptive model

(b) predictive model

(c) reinforcement learning

(d) impeditive model

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) What are the advantage of artificial intelligence? Explain.

Or

(b) Describe the main functions of machine learning.

12. (a) Explain the supervised learning algorithms with example.

Or

(b) What is difference between linear regression and logistic regression? Explain.

13. (a) How is SVM related to KNN?

Or

(b) Summarize the main concept of K-Nearest Neighbors.

14. (a) What do you mean by decision trees? Explain.

Or

(b) Elaborate the benefits of Naive Bayes algorithms in machine learning.

15. (a) Write about the introduction to K-means algorithm.

Or

(b) Distinguish between the machine learning and data science.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Elaborate the Hands on data visualization with Python Matplotlib.

Or

(b) What is the difference between pandas and DataFrame? Explain.

17. (a) Discuss the methods of gradient descent optimization.

Or

(b) Illustrate the implementation of classification problem in linear regression.

18. (a) Outline the data normalization used in support vector machines.

Or

(b) Explain the implementation of K-Nearest neighbors.

19. (a) How Naive Bayes algorithms works?

Or

(b) Formulate the implementation of decision tree with example.

20. (a) Determine the working of K-means clustering algorithm.

Or

(b) Determine the ethical and moral issues and challenges in machine learning.

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