ML Fundamental Assessment

Score Obtained: 47/50 (94%)

RETAKE (/PACKAGE-COST-DETAILS/#) VIEW REPORT

What is Machine learning?

1/1 ATTEMPTED

- [x] The autonomous acquisition of knowledge through the use of computer program
- [ ] The autonomous acquisition of knowledge through the use of manual programs
- [ ] The selective acquisition of knowledge through the use of computer programs
- [ ] The selective acquisition of knowledge through the use of manual programs

2.

Machine learning is an application of _____

1/1 ATTEMPTED

- [ ] Block Chain
- [x] Artificial Intelligence
- [ ] Both A and B
- [ ] None of these

3.

Which of the following are the Applications of Machine learning ?

1/1 ATTEMPTED

- Email Filtering
- Sentiment Analysis
- Face Recognition
- All of the above

4. The Father of Machine Learning is 1/1 ATTEMPTED

- Geoffrey Everest Hinton
- Geoffery Hill
- Geoffrey Chaucer
- None of the above

5. In which industry is machine learning commonly used for fraud detection and risk management? 1/1 ATTEMPTED

- Agriculture
- Finance
- Entertainment
- Education

6.
If mean is less than mode, the distribution will be? 1/1 ATTEMPTED

- Positively skewed

- Negatively skewed
- Symmetrical
- None of these

7.

Which of the following is not a major data analysis approaches?

1/1 ATTEMPTED

- Data Mining
- Predictive Intelligence
- Business Intelligence
- Text Analytics

8. What is the primary purpose of EDA in Data Science?

1/1 ATTEMPTED

- To make data more complex
- To simplify complex data
- To discover insights & patterns in data
- To visualize data

9. Which of the following information is not given by Five Number Summary?

0/1 ATTEMPTED

- Mean
- Median

- Mode
- All of the above

10. What is the purpose of encoding categorical data in machine learning?

1/1 ATTEMPTED

- To increase the size of the dataset.
- To reduce the number of categories
- To make the data human-readable
- To represent categorical data in a format suitable for machine learning algorithms

11. How can outliers in a numerical dataset be treated?

1/1 ATTEMPTED

- Ignoring them during analysis
- Replacing them with the median value
- Removing them or transforming them
- Assigning them a weight of 0

12. What is the purpose of encoding categorical data in machine learning?

1/1 ATTEMPTED

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13. Which method in pandas provides a concise summary of a DataFrame, including the number of non-null values in each column? 1/1 ATTEMPTED

- df.describe()
- df.info()
- df.head()
- df.shape()

14.
How many coefficients do you need to estimate in a simple linear regression model (One independent variable)? 1/1 ATTEMPTED

- 1
- 12
- 3
- 2

15.
Linear Regression is an example of? 1/1 ATTEMPTED

- Supervised Learning
- Unsupervised Learning
- Semi-Supervised Learning
- Reinforcement Learning

16.

For what Polynomial Regression is used?

1/1 ATTEMPTED

- Find the best linear line
- Handle with non-linear and separable data
- Handle linear and separable data
- Classify binary data

17.

Which of the following metrics can be used for evaluating regression models?

1/1 ATTEMPTED

- RMSE
- MSE
- MAE
- all of these

18.

True-False: Linear Regression is mainly used for Regression.

1/1 ATTEMPTED

- TRUE
- FALSE
- -
- -

19.

is a widely popular concept of information theory. It is the measure of number of bits that are needed to encode certain information based on an initial hypothesis_____?

1/1 ATTEMPTED

- Mean-Squared Loss
- Cross-Entropy
- Hinge loss
- Regression loss

20.

_____loss is mostly used in SVM, this is used in the combination of the activation function in the last layer. We use this loss to classify whether an email is a spam or not.

1/1 ATTEMPTED

- Hinge loss
- entropy loss
- cross-entropy loss
- MAE loss

21.

What is the name of a regression model in which more than one independent variable is utilized to predict the dependent variable?

1/1 ATTEMPTED

- a simple linear regression model
- a multiple regression model

- an independent model
- none of the above

22.

Root Mean Squared error give difference between_____.

1/1 ATTEMPTED

- orignal value and wrong value
- predict value and true value
- True value and false value
- none of these

23.

_____is an analytical approach to Linear Regression with a Least Square Cost Function..

1/1 ATTEMPTED

- Slope Equation
- Variable equation
- Normal Equation
- none of these

24. Which of the following is a commonly used metric for evaluating the performance of a Linear Regression model?

1/1 ATTEMPTED

- Accuracy Score
- F1 Score

- Mean Squared Error (MSE)
- Confusion Matrix

25. What is a key assumption of Linear Regression? 1/1 ATTEMPTED

- The data must have a normal distribution
- The relationship between variables is linear
- Outliers have no impact on the model
- The number of features should be equal to the number of observations

26. What is the primary purpose of a Loss Function in Linear Regression? 1/1 ATTEMPTED

- To maximize the accuracy of predictions
- To minimize the difference between predicted and actual values
- To calculate the mean of the target variable
- To identify outliers in the data

27.
Ridge and Lasso regression are simple techniques to _____ the complexity of the model and prevent over-fitting which may result from simple linear regression. 1/1 ATTEMPTED

- Increase
- Eliminate
- Decrease

- None of the above

28.

Ridge regression uses which norm?

1/1 ATTEMPTED

- L1
- L2
- Combination of L1 and L2
- None

29.

Which of the following of the coefficients is added as the penalty term to the loss function in Lasso regression?

1/1 ATTEMPTED

- Absolute value of magnitude
- Squared magnitude
- Number of non-zero entries
- None of the above

30.

What type of penalty is used on regression weights in Ridge regression?

1/1 ATTEMPTED

- L0
- L2
- L1

- None of the above

31.

In Ridge regression, A hyper parameter is used called '_____' that controls the weighting of the penalty to the loss function.

1/1 ATTEMPTED

- Gamma
- Alpha
- Lambda
- None of above

32.

In terms of the bias-variance trade-off, which of the following is substantially more harmful to the test error than the training error?

1/1 ATTEMPTED

- Bias
- Loss
- Variance
- Risk

33.

Which of the following is correct use of cross validation?

1/1 ATTEMPTED

- Selecting variables to include in a model
- Selecting parameters in prediction function

- Comparing predictors
- All of these

34.

Which of the following is a common error measure?

0/1 ATTEMPTED

- Median absolute deviation
- Sensitivity
- Specificity
- All of the mentioned

35.

For Ridge Regression, if the regularization parameter = 0, what does it mean?

1/1 ATTEMPTED

- Large coefficients are not penalized
- Overfitting problems are not accounted for
- The loss function is as same as the ordinary least square loss function
- All of the above

36.

For Lasso Regression, if the regularization parameter = 0, what does it mean?

1/1 ATTEMPTED

- The loss function is as same as the ordinary least square loss function
- Can be used to select important features of a dataset

- Shrinks the coefficients of less important features to exactly 0
- All of the above

37. With Lasso Regression the influence of the hyper parameter lambda, as lambda tends to zero the solution approaches to 1/1 ATTEMPTED

- Zero
- One
- Linear Regression
- Infinity

38. What is the main purpose of Ridge and Lasso regularization in linear regression? 1/1 ATTEMPTED

- To increase the complexity of the model
- To reduce the impact of outliers
- To penalize large coefficients and prevent overfitting
- To simplify the model by removing unnecessary features

39.
Which of the following is used where the target variable is of categorical nature? 1/1 ATTEMPTED

- Logistic Regression
- Knime

- Keras
- Linear Regression

40.
What's the cost function of the logistic regression?

0/1 ATTEMPTED

- Sigmoid function
- Logistic Function
- both (A) and (B)
- none of these

41.
Logistic regression assumes a:

1/1 ATTEMPTED

- Linear relationship between continuous predictor variables and the outcome variable.
- Linear relationship between continuous predictor variables and the logit of the outcome variable.
- Linear relationship between continuous predictor variables.
- Linear relationship between observations.

42.
What is the purpose of performing cross-validation?

1/1 ATTEMPTED

- To assess the predictive performance of the models
- To judge how the trained model performs outside the sample on test data

- Both A and B
- None of these

43.

Function which performs the role of an activation function in machine learning which is used to add non-linearity in a machine learning model. Basically, the function determines which value to pass as output and what not to pass as output.

1/1 ATTEMPTED

- cost function
- signoidal function
- sigmoid function
- none of these

44.

Formula - TP / (TP + FN): Which of these is being represented by formula?

1/1 ATTEMPTED

- Accuracy
- Recall
- harmonic mean
- Classification Rate

45. What is the primary purpose of logistic regression in machine learning?

1/1 ATTEMPTED

- To perform clustering

- To predict continuous values
- To model binary outcomes
- To reduce dimensionality

46. What method is commonly used to estimate the coefficients in logistic regression? 1/1 ATTEMPTED

- Least Squares
- Maximum Likelihood Estimation (MLE)
- k-means clustering
- Ridge Regression

47. What is the primary goal of supervised learning? 1/1 ATTEMPTED

- To discover patterns in unlabeled data
- To predict outcomes based on labeled input data
- To reduce the dimensionality of the data
- To cluster similar data points

48. Which of the following is a common metric for evaluating classification models? 1/1 ATTEMPTED

- Mean Squared Error
- R-squared

- Accuracy
- Silhouette Score

49. Which of the following techniques is used to prevent overfitting?

1/1 ATTEMPTED

- Increasing the learning rate
- Cross-validation
- Reducing the training dataset size
- Using a linear model for complex data

50. Which algorithm is primarily used for dimensionality reduction?

1/1 ATTEMPTED

- Logistic Regression
- Decision Trees
- Principal Component Analysis (PCA)
- Support Vector Machines