Set 02 - AI/MI First Assessment Test

Total points 10/20

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✗ **01) What is 'Train data' and 'Test data' ratio split mostly used in industry?** 0/1

- ○ 80% Train & 20% Test, 75% Train & 25% Test, 60% Train & 40% Test
- ○ 75% Train & 25% Test, 60% Train & 40% Test, 80% Train & 20% Test
- ○ 90% Train & 10% Test, 80% Train & 20% Test, 70% Train & 30% Test
- ◉ 80% Train & 20% Test, 60% Train & 40% Test, 90% Train & 10% Test ✗

Correct answer

- ◉ 90% Train & 10% Test, 80% Train & 20% Test, 70% Train & 30% Test

✓ **02) Which of the following metrics can be used for evaluating the regression models?** 1/1

1) R Squared
2) Adjusted R Squared
3) F Statistics
4) RMSE / MSE / MAE

- ○ 1 and 2.
- ○ 2, 3 and 4.
- ◉ 1, 2, 3 and 4 ✓
- ○ 2 and 4.

✓ **03) Identify the correct statement - Statistical relationship between dependent and independent variables in regression?** 1/1

- ○ Coefficient of determination or Correlation indexing
- ○ Coefficient of determination or Covariance coefficient
- ◉ Coefficient of determination or Correlation coefficient ✓
- ○ Correlation coefficient or Covariance coefficient

✓ **04) In Random forest you can generate hundreds of trees (say T1, T2 .....Tn) and then aggregate the results of these tree.** 1/1

Which of the following is true about individual tree in Random Forest?

1. **Individual tree is built on a subset of the features**
2. **Individual tree is built on all the features**
3. **Individual tree is built on a subset of observations**
4. **Individual tree is built on full set of observations**

- ○ 2 and 3
- ◉ 1 and 3 ✓
- ○ 2 and 4
- ○ 1 and 4

✓ **05) In confusion matrix, TP = 80, FN = 20, FP = 11 and TN = 289; calculate the Accuracy, F1 score of the model** 1/1

- ○ Accuracy - 89.75%, F1 Score - 0.838
- ◉ Accuracy - 92.25%, F1 Score - 0.838 ✓
- ○ Accuracy - 89.75%, F1 Score - 0.738
- ○ Accuracy - 92.25%, F1 Score - 0.738

✗ **06) Evaluate the regression metrics MAE, MSE, RMSE & MAPE with following information;** 0/1

Y(actual) -> 20.52, 24.38, 27.69, 29.91, 35.11
Y(predict) -> 19.01, 23.31, 27.99, 30.12, 34.09

- ○ MAE = 0.882, MSE = 0.959, RMSE = 0.920, MAPE = 3.29%
- ◉ MAE = 0.920, MSE = 0.882, RMSE = 0.959, MAPE = 3.29% ✗
- ○ MAE = 0.882, MSE = 0.920, RMSE = 0.959, MAPE = 3.29%
- ○ MAE = 0.920, MSE = 0.959, RMSE = 0.882, MAPE = 3.29%

Correct answer

- ◉ MAE = 0.882, MSE = 0.920, RMSE = 0.959, MAPE = 3.29%

✓ **07) Classification accuracy alone can be misleading if you have _____ number of observations in each class.** 1/1

- ○ A correct
- ○ A equal
- ◉ An unequal ✓
- ○ A wrong

✓ **08) What does p-value signify about the statistical data?** 1/1

- ○ Evidence against the null hypothesis and is typically greater than 0.075
- ◉ Evidence against the null hypothesis and is typically less than or equal to 0.05 ✓
- ○ Evidence against the null hypothesis and is typically greater than 0.05
- ○ Evidence against the null hypothesis and is typically less than or equal to 0.075

✗ **09) Which of the following holds good for imbalanced dataset in classification analysis?** 0/1

- ○ Imbalanced Ratio of minor class to major class is less than or equal to 10
- ◉ Imbalanced Ratio of minor class to major class is greater than or equal to 10 ✗
- ○ Imbalanced Ratio of major class to minor class is less than 10
- ○ Imbalanced Ratio of major class to minor class is greater than or equal to 10

Correct answer

- ◉ Imbalanced Ratio of major class to minor class is greater than or equal to 10

✗ **10) Which one of the statement is true regarding residuals in regression analysis?** 0/1

- (●) There is no such rule for residuals ✗
- ( ) Mean of residuals is always zero
- ( ) Mean of residuals is always greater than zero
- ( ) Mean of residuals is always less than zero

Correct answer

- (●) Mean of residuals is always zero

✗ **11) Logistic regression is ___ when the observed outcome of dependent variable can have more than one possible types** 0/1

- (●) Binomial, Multinomial only ✗
- ( ) Binomial, Multinomial and Ordinal
- ( ) Binomial and Ordinal only
- ( ) Multinomial and Ordinal only

Correct answer

- (●) Binomial, Multinomial and Ordinal

✗ **12) Decision tree is also referred to as ____ algorithm** 0/1

- ○ Ordinal partitioning
- ○ Recursive partitioning
- ○ Variable partitioning
- ◉ Non-Recursive partitioning ✗

Correct answer

- ◉ Recursive partitioning

✓ **13) We are predicting number of people (400 records) who have more than $ 10 K of average bank balance.**
Confusion matrix values are TP = 250, FN = 10, FP = 20, TN = 120 1/1

- ○ In reality, there are totally 120 accounts who have a balance more than $ 10 K and 140 accounts with balance - less than $ 10 K
- ○ In reality, there are totally 250 accounts who have a balance more than $ 10 K and 20 accounts with balance - less than $ 10 K
- ◉ In reality, there are totally 260 accounts who have a balance more than $ 10 K and 140 accounts with balance - less than $ 10 K ✓
- ○ In reality, there are totally 270 accounts who have a balance more than $ 10 K and 140 accounts with balance - less than $ 10 K

✗ **14) Decision tree regressor is achieved by ____ splitting criteria** 0/1

- ○ Information Gain
- ◉ Gini Index ✗
- ○ Entropy
- ○ Loss in the mean squared error

Correct answer

- ◉ Loss in the mean squared error

✗ **15) Logistic Regression transforms the output probability to be in a range of [0, 1]. Which of the following function is used by logistic regression to convert the probability in the range between [0,1].** 0/1

- ○ Mode
- ◉ Square ✗
- ○ Probit
- ○ Sigmoid

Correct answer

- ◉ Sigmoid

✓ **16) Which of statement is true for Random forests?** 1/1

- ○ Random forests can be used for Categorical Target Variables only
- ○ Random forests can not be used for Continuous and Categorical Target Variables
- ◉ Random forests can be used both for Continuous and Categorical Target Variables ✓
- ○ Random forests can be used for Continuous Target Variables only

✓ **17) Calculate the True Positive Rate (TPR) and False Positive Rate (FPR) for ROC_AUC_Score and Confusion matrix values are TP = 70, FN = 30, FP = 40, TN = 260** 1/1

- ○ True Postive Rate (TPR) = 0.70, False Positive Rate (FPR) = 0.64
- ◉ True Postive Rate (TPR) = 0.70, False Positive Rate (FPR) = 0.13 ✓
- ○ True Postive Rate (TPR) = 0.13, False Positive Rate (FPR) = 0.70
- ○ True Postive Rate (TPR) = 0.64, False Positive Rate (FPR) = 0.13

✗ **18) What are the Regression Analysis Loss Functions in Machine Learning?** 0/1

- ○ Mean Absolute Error, Mean Squared Error & Root Mean Squared Error
- ○ Mean Absolute Error & Root Mean Squared Error
- ○ Mean Squred Error & Root Mean Squared Error
- ◉ Mean Absolute Root & Error Mean Squared Error ✗

Correct answer

- ◉ Mean Absolute Error, Mean Squared Error & Root Mean Squared Error

✗ **19) We are predicting number of people (400 records) who have more than $ 100 K annual salary.**
Confusion matrix values are TP = 250, FN = 10, FP = 20, TN = 120 0/1

- ○ Out of 200 cases, our classification model predicted “YES” 270 cases, and “NO” 130 cases
- ◉ Out of 200 cases, our classification model predicted “YES” 270 cases, and “NO” 60 cases ✗
- ○ Out of 200 cases, our classification model predicted “YES” 250 cases, and “NO” 130 cases
- ○ Out of 200 cases, our classification model predicted “YES” 270 cases, and “NO” 5 cases

Correct answer

- ◉ Out of 200 cases, our classification model predicted “YES” 270 cases, and “NO” 130 cases

✓ **20) The confusion matrix visualizes the ____ of a classifier by comparing the actual and predicted classes.** 1/1

- ◉ Accuracy ✓
- ○ Stability
- ○ Connectivity
- ○ Comparativity

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