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T.Y. B.Tech. (Computer Science and Engineering) (Part - III) (CBCS) (Semester - VI) Examination, March - 2023

MACHINE LEARNING

Sub. Code : 81549

Day and Date : Saturday, 01 - 07 - 2023 **Total Marks : 70**

Time : 10.30 a.m. to 01.00 p.m.

Instructions : **1)** **All questions are compulsory.**
2) **Assume suitable data wherever necessary.**
3) **Figures to the right indicate full marks.**

Q1) Solve MCQs. **[14]**

i) Cleaning of Data is done in _____.

a) Data Collection

b) Data Preparation

c) Data Splitting

d) Data Testing.

ii) What might be the best complexity of the curve which can be utilized for isolating the two classes displayed in the picture down?

a) Linear

b) Quadratic

c) Cubic

d) Insufficient data to draw conclusion

iii) Which of following are categorical features?

a) Height of a person
b) Price of petroleum
c) Mother tongue of a person
d) Amount of rainfall in a day

iv) _____ gives the rate of speed where the gradient moves during gradient descent.

a) Learning rate
b) Cost Function
c) Hypothesis Function
d) None of above

v) _____ is the randomness in data and metric to use impurity.

a) Information Gain
b) Gini Index
c) Variance
d) Entropy

vi) Which is not an advantage of SVM?

a) High Memory management
b) Handles nonlinear data efficiently
c) Capable of handling outliers
d) Handles high dimensional space.

vii) Neural networks can be used in different fields. Such as _____.

a) Classification
b) Data processing
c) Compression
d) All of the above

Q2) Solve any two of the following. **[2×7=14]**

a) Explain performance measures for machine learning.
b) Explain simple regression in matrix form.
c) What is over fitting and Under fitting?

Q3) Solve any two of the following. **[2×7=14]**

a) Draw and explain machine learning architecture.
b) Explain simple linear regression.
c) Explain Bayesian Network.

Q4) Solve any two of the following. **[2×7=14]**

a) What is information gain and entropy in decision tree?

b) Explain Elbow Method in K Means clustering.

c) Explain Multiclass classification with neural network.

Q5) Solve any two of the following. **[2×7=14]**

a) Explain Hyperplane and Support Vectors in the SVM algorithm.

b) Explain Association Rule mining.

c) Which are applications of neural networks?