Reg. No															

B.Tech. DEGREE EXAMINATION, JUNE 2023

Fifth Semester

18CSE363J - MACHINE LEARNING

(For the candidates admitted during the academic year 2018-2019 to 2021-2022)

Note:

i. **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40 minutes.
ii. **Part - B** and **Part - C** should be answered in answer booklet.

Time: 3 Hours **Max. Marks: 100**

Part - A (20 × 1 Marks = 20 Marks)
Answer **All** Questions

		Marks	BL	CO
1.	_____ machine learning techniques helps in detecting the outliers in data. (A) Classification (B) Clustering (C) Anomaly detection (D) Regression	1	1	1
2.	Find S algorithm ignores _____ examples. (A) Negative (B) Positive (C) Both (D) Neutral	1	1	1
3.	Another name for an output attribute. (A) predictive variable (B) independent variable (C) estimated variable (D) dependent variable	1	1	1
4.	What characterize unlabeled examples in machine learning _____. (A) there is prior knowledge (B) there is plenty of confusing knowledge (C) there is no confusing knowledge (D) There is no prior knowledge.	1	1	1
5.	_____ statistical procedure to find the best fit for a set of data points by minimizing the sum of the offsets. (A) Sigmoid function (B) Maximum Likelihood (C) Logarithmic Loss (D) Least Square Error	1	1	2
6.	In the regression equation y=b0+b1x where b0 is the _____ (A) Slope of the line (B) Independent variable (C) Constant (D) Coefficient of determination	1	1	2
7.	Pruning is a technique that is used to reduce _____ (A) Overfitting (B) Underfitting (C) high bias (D) high variance	1	1	2
8.	Suppose you got a situation where you find that your linear regression is under fitting the data. In such situation which of the following options would you consider? (A) You will add more features (B) you will start introducing higher degree feature (C) you will remove some features (D) You will add dummy features	1	1	2
9.	If the regression equation is equal to y=23.6-54.2x, then 23.6 is the _____ while -54.2 is the _____ of the regression line (A) Slope, intercept (B) Slope, Regression coefficient (C) Intercept, slope (D) Radius, Intercept	1	1	3
10.	A perceptron is a _____ (A) Feed-forward neural network (B) Backpropagation algorithm (C) Backtracking algorithm (D) Feed Forward-backward algorithm	1	1	3

11.	A 4-input neuron has weights 1, 2, 3 and 4. The transfer function is linear with the constant of proportionality being equal to 2. The inputs are 4, 10, 5 and 20 respectively. What will be the output? (A) 76 (B) 238 (C) 119 (D) 123	1	1	2
12.	What was the 2nd stage in perceptron model called? (A) sensory units (B) output unit (C) association unit (D) summing unit	1	1	3
13.	_____ is not a clustering approach. (A) Hierarchical (B) Portioning (C) project based (D) Density	1	1	4
14.	What PCA does afterfall? (A) Create clusters in order to let you know what are the class (B) Reduce dimensionality of the data and create new features (C) Give you the highest number of features possible (D) Predicts your target with high efficiency	1	1	4
15.	What type of input can be given to the similarity based clustering? (A) NxN (B) Distance matrix D (C) NxD feature Matrix (D) Design Matrix X	1	1	4
16.	Temporal Difference Learning is an _____ technique that is very commonly used in reinforcement learning (A) Supervised Learning (B) Semi supervised learning (C) Training (D) unsupervised learning	1	1	4
17.	_____ is a statistical method used to estimate the skill of machine learning models. (A) Cross-validation (B) Training (C) Testing (D) Hypothesis	1	1	5
18.	The _____ method is a resampling technique used to estimate statistics on a population by sampling a dataset with replacement. (A) Bootstrap (B) Bagging (C) Boosting (D) Stacking	1	1	5
19.	A _____ is used when we are interested in the difference between two variables for the same subject. (A) paired t-test (B) Normal Test (C) Positive test (D) Negative test	1	1	5
20.	A _____ is any ML algorithm (for regression/classification) that provides an accuracy slightly better than random guessing. (A) Weak Learner (B) Q Learning (C) Reinforcement (D) Learning	1	1	5

Part - B (5 × 4 Marks = 20 Marks)

Answer **any 5** Questions

		Marks	BL	CO
21.	Annotate the different type of Machine learning algorithm.	4	2	1
22.	Write note on Overfitting and Under fitting.	4	2	1
23.	Briefly write note on Simple Linear regression.	4	3	2
24.	Illustrate Perceptron learning with neat Diagram.	4	3	3
25.	Compare LVM and LDA.	4	2	4
26.	Annotate Non deterministic rewards and action in reinforcement learning.	4	2	5

27.	How K-Fold Validation is different from traditional training and testing methods?	4	2	5

Part - C (5 × 12 Marks = 60 Marks)

Answer **All** Questions

		Marks	BL	CO
28.	a. Elaborate concept learning with neat diagram. (OR) b. Explain the application of Machine learning with a real time example.	12	2	1
29.	a. Discuss the major drawbacks of K-nearest Neighbour learning Algorithm and how it can be corrected. (OR) b. Elucidate the Multiple linear Regression in detail.	12	3	2
30.	a. Elaborate in detail about the functionality and types of neural network and justify the relation between biological neuron. (OR) b. Discuss Naïve Bayes Classifier in detail.	12	2	3
31.	a. Elucidate with a real time example K-Means Clustering. (OR) b. Describe the Q-learning algorithm and how it is used in Reinforcement Learning.	12	2	4
32.	a. Elaborate the reason for implementing Principal component Analysis in ML. (OR) b. Illustrate Ensembling model and its types with neat diagram.	12	2	5

* * * * *