Sanjay Ghodawat University, Kolhapur

2020-21

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

EXM/P/09/00

Year and Program: TY BTech (CSE)	**School of Technology**	**Department: CSE**
Course Code: CST310	**Course Title: Machine Learning**	**Semester :VI**
Day and Date:	**Re-End Semester Examination**	**Time : 2 Hrs.** **Max Marks : 50**

Instructions: 1) All Questions are compulsory.

Q.1		**Answer/Solve the following (any Two)**	**Marks**	Bloom's Level	CO
	a)	Discuss feature selection methods in machine learning.	8	3	CO2
	b)	Elaborate on applications of machine learning.	8	3	CO2
	c)	What is cost function for linear regression. Derive cost function of linear regression to be used in gradient descent.	8	2	CO2
Q.2		**Answer/Solve the following (any two)**			
	a)	Comment on classification in machine learnng and classify following record 'X' using Naïve Bayes classifier. Use given dataset. X = (Give Birth = yes, Can Fly = no, Live in Water = yes, Have Legs = no)	08	4	CO3
	b)	Elaborate on how Gaussian mixture model can be used for clustering.	8	2	CO3

Name	Give Birth	Can Fly	Live in Water	Have Legs	Class
human	yes	no	no	yes	mammals
python	no	no	no	no	non-mammals
salmon	no	no	yes	no	non-mammals
whale	yes	no	yes	no	mammals
frog	no	no	sometimes	yes	non-mammals
komodo	no	no	no	yes	non-mammals
bat	yes	yes	no	yes	mammals
pigeon	no	yes	no	yes	non-mammals
cat	yes	no	no	yes	mammals
leopard shark	yes	no	yes	no	non-mammals
turtle	no	no	sometimes	yes	non-mammals
penguin	no	no	sometimes	yes	non-mammals
porcupine	yes	no	no	yes	mammals
eel	no	no	yes	no	non-mammals
salamander	no	no	sometimes	yes	non-mammals
gila monster	no	no	no	yes	non-mammals
platypus	no	no	no	yes	mammals
owl	no	yes	no	yes	non-mammals
dolphin	yes	no	yes	no	mammals
eagle	no	yes	no	yes	non-mammals

	c)	Discuss bagging and boosting techniques used for improving accuracy of machine learning algorithms.	8	2	CO4
Q.3		**Answer/Solve the following (any two)**			
	a)	Comment on why it's important to evaluate performance of machine learning algorithms and use of cross-validation for the same.	9	3	CO3
	b)	Discuss perceptron model and elaborate how it can be used for implementing logical gates.	9	3	CO3
	c)	Elaborate on deep learning techniques.	9	2	CO2

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