Seat No: _____ **Enrollment No: _____**

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

B.Tech. Summer 2023 – 24 Examination

Semester: 8 **Date: 05/04/2024**

Subject Code: 203105481 **Time:10:30am to 1:00pm**

Subject Name: Machine Learning **Total Marks: 60**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1	**Objective Type Questions** - (Fill in the blanks, one word answer, MCQ-not more than five in case of MCQ) (All are compulsory) (Each of one mark)	**(15)**	**CO**	**PO**	**Bloom's Taxonomy**
	1. Machine Learning is an application of _____ a) Cloud b) AI c) Blockchain d) None of the above		**1**	**2**	**1**
	2. Machine learning approaches can be categorized in_____ categories a) 2 b) 3 c) 4 d) 5		**1**	**2**	**1**
	3. Real world machine learning use cases are a) Chatbots b) Fraud detection c) Digital assistant d) All of the above		**6**	**2**	**3**
	4. The unsupervised learning problem can be grouped as _____ a) Clustering b) Association c) Both d) None		**1**	**4**	**1**
	5. Choose that following statement is true or false: True error is defined over the entire instance space, and not just over training data a) True b) False		**3**	**1**	**1**
	6. _____ is the scenario when the model fails to decipher the underlying trend in the input		**1**	**2**	**6**
	7. Random forest is an algorithm for _____ method		**1**	**5**	**1**
	8. K-mean is an algorithm for _____ method.		**1**	**5**	**1**
	9. Full form of KNN is _____		**1**	**5**	**1**
	10. A layer in neural network responsible for learning process is known as _____ layer.		**1**	**5**	**2**
1	11. What is clustering?		**1**	**1**	**1**
1	12. Define machine learning.		**1**	**1**	**1**

	13. What do you mean by genetic algorithm?		**1**	**1**	**2**
	14. What is the task of neurons?		**1**	**2**	**2**
	15. What is supervised learning?		**2**	**1**	**1**
Q.2	Answer the following questions. (Attempt any three)	**(15)**			
	A) Explain types of learning with example		**3**	**2**	**3**
	B) Briefly explain linear regression.		**2**	**1**	**1**
	C) Explain neural network with working of each layer.		**3**	**3**	**3**
	D) Briefly describe application of machine learning in different areas of today's world.		**1**	**4**	**4**
Q.3	A) What is decision tree? Design decision tree to predict if person is fit or not?	**(07)**	**4**	**3**	**4**
	B) Explain Bayes theorem and explain the features of Bayesian Learning	**(08)**	**4**	**3**	**2**
	OR				
	B) Describe MAP Learning algorithm.	**(08)**	**3**	**5**	**1**
Q.4	A) Explain Q learning	**(07)**	**3**	**3**	**3**
	OR				
	A) What is genetic algorithm? Explain fitness function and mutation.	**(07)**	**3**	**3**	**1**
	B) Assume that you have learned basic addition techniques in childhood for 2-3 digits and now you are capable to add any number even for 10 digits. Explain learning flow in this process.	**(08)**	**6**	**4**	**4**