Seat No.: _____ Enrolment No._____

# GUJARAT TECHNOLOGICAL UNIVERSITY

**BE - SEMESTER–VII (NEW) EXAMINATION – SUMMER 2022**

**Subject Code:3170724 Date:14/06/2022**

**Subject Name:Machine Learning**

**Time:02:30 PM TO 05:00 PM Total Marks: 70**

**Instructions:**

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

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|---|---|---|---|
| **Q.1** | **(a)** | Define Machine learning? Briefly explain the types of learning. | **03** |
| | **(b)** | Explain the concept of penalty and reward in reinforcement. Learning. | **04** |
| | **(c)** | What do you mean by a well-posed learning problem? Explain important features that are required to well-define a learning problem. | **07** |
| **Q.2** | **(a)** | How can we take care of outliers in data? | **03** |
| | **(b)** | Explain Key elements of Machine Learning. Explain various function approximation methods. | **04** |
| | **(c)** | Draw and explain the flow diagram of machine learning procedure. | **07** |
| | | **OR** | |
| | **(c)** | List and explain the types of machine learning in brief. | **07** |
| **Q.3** | **(a)** | What is likelihood probability? Give an example. | **03** |
| | **(b)** | What is data sampling? Explain data sampling methods? | **04** |
| | **(c)** | What are the Techniques Provided in Data Preprocessing? Explain in brief. | **07** |
| | | **OR** | |
| **Q.3** | **(a)** | What is difference between Machine Learning and Deep Learning. | **03** |
| | **(b)** | Differentiate PCA and LDA. | **04** |
| | **(c)** | Explain the process of Supervised Learning Model. | **07** |
| **Q.4** | **(a)** | Define issues in machine Learning. | **03** |
| | **(b)** | Write a note on KNN. | **04** |
| | **(c)** | List the methods for Model evaluation. Explain each. How we can improve the performance of model. | **07** |
| | | **OR** | |
| **Q.4** | **(a)** | Explain the training of Predictive Model. | **03** |
| | **(b)** | List Classification algorithms. Explain Decision Tree as classification method. | **04** |
| | **(c)** | What is Clustering? Explain K-mean clustering algorithm. | **07** |
| **Q.5** | **(a)** | Explain the need of feature engineering in ML. | **03** |
| | **(b)** | Explain Binomial Distribution with an example. | **04** |
| | **(c)** | Explain Bayes' theorem in details. | **07** |
| | | **OR** | |
| **Q.5** | **(a)** | Define:<br>a. Supervised Learning<br>b. Classification<br>c. Regression | **03** |
| | **(b)** | Write a short note on feed forward neural network. | **04** |
| | **(c)** | Explain Monte Carlo Approximation. | **07** |

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