UNIT 1

UNIT 2

UNIT 3

UNIT 4

Learning Curves: 233-235

UNIT 5

Introduction to data science with python: 2-3

Data Science, python: 2-3

Data Structure: 3-6

Built-in Data Structure (List, Dictionary, Tuple, Sets): 4

User-defined Data Structure (Arrays vs lists, Stack, Queue, Tree, Linked List, graph): 5-6

Functions in python: 7-10

Types of function: 7-8

Function Arguments and it's types: 8-10

Python libraries for data analysis: 10

NumPy: 10-30

Matplotlib: 30-34

Pandas: 35-44

Problems based on computational complexity: 44-48

Time complexity: best case, average case, worst case: 44-45

Big-O Notation: 46-47

Linear Search: 46

Merge Sort: 47

Insertion Sort: 48

Simple Case studies based on python: 48-51

Binary Search: 48-51

Common elements in list: 51-53

Hash Table: 53-54

Dictionary: 54-61

Part A and Part B: 62-63

Assignment 1

Find the Eigen values and eigen vectors for the given matrix $\begin{bmatrix} -6 & 4 \\ 3 & 5 \end{bmatrix}$ (Use answer sheet)

Assignment 2

Explain about different types of machine learning algorithms with an example? (Use answer sheet)

CAE 1

Calculate the pseudo inverse for the matrix B = $\begin{bmatrix} 1 & 2 & 3 \\ 2 & 4 & 6 \end{bmatrix}$ (Unit 1, 162-172)

Find out the eigen values and eigen vectors for the given matrix $\begin{bmatrix} 8 & 7 \\ 2 & 3 \end{bmatrix}$ (Unit 1, 110-124)

Enumerate the different types of normal distributions (mean, median, mode)

https://corporatefinanceinstitute.com/resources/knowledge/other/normal-distribution/

Interpret Hypothesis testing and discuss how to test the assumptions made regarding a population parameter. (UNIT 2, 100-103)

https://www.britannica.com/science/statistics/Experimental-design

CAE 2

Explain the steps involved in data science process? (UNIT 3, 21-42)

Explain the following

1. Univariate Non-graphical
2. Multivariate Non-graphical
3. Univariate graphical
4. Multivariate graphical (UNIT 3, 11-17)

Explain the about different machine learning algorithms?

https://www.sas.com/en_gb/insights/articles/analytics/machine-learning-algorithms.html#:~:text=At%20its%20most%20basic%2C%20machine,developing%20'intelligence'%20over%20time.

Explain the working of neural network with its architecture

https://www.upgrad.com/blog/neural-network-architecture-components-algorithms/