

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE, NOVEMBER - 2023**

FUNDAMENTALS OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

[Maximum marks: 75]

[Time: 3 Hours]

PART A

I. Answer all the following questions in one word or one sentence. Each question carries 1 mark

(9 x 1 = 9 Marks)

		Module outcome	Cognitive level
1	Define Artificial Intelligence.	M1.01	R
2	List any two applications of AI.	M1.04	R
3	What is dictionary in Python?	M2.03	R
4	Write syntax of if statement in Python.	M2.02	U
5	Define Regression analysis in Machine Learning.	M3.02	R
6	Name two classification of Machine learning.	M3.01	R
7	What does K in KNN algorithm means?	M3.03	R
8	Name two categories of Search Algorithms in AI.	M4.01	R
9 is a recursive or backtracking algorithm which is used in decision-making and game theory.	M4.02	R

PART B

II. Answer any eight questions from the following. Each question carries 3 marks.

(8 x 3 = 24 Marks)

		Module outcome	Cognitive level
1	Define any three Applications of AI.	M1.03	R
2	List any six types of Learning.	M1.02	R
3	Explain for loop in Python with suitable example.	M2.02	U
4	Implement a Python program using while loop to print reverse of a given number.	M2.02	A
5	Summarize the Role of Python in AI.	M2.01	U
6	Perform the following operations on a list of numbers. Create a list of 5 odd numbers Create a list of 5 even numbers. Combine the two lists.	M2.03	A

7	List the Steps for Building a Classifier in Python.	M3.05	U
8	Write the names of libraries needed for data processing.	M3.04	R
9	Outline the components of search problem.	M4.01	U
10	Write the code snippet for importing libraries needed for a Bot to Play Tic Tac Toe.	M4.05	A

PART C

Answer all questions. Each question carries seven marks

(6 x 7 = 42 Marks)

		Module outcome	Cognitive level
III	List the different fields of AI.	M1.03	R
	OR		
IV	Explain Necessity of Learning AI.	M1.01	U
V	Explain basic datatypes in Python.	M2.02	U
	OR		
VI	Write a program to sort a dictionary in ascending/descending order by key and ascending/descending order by value.	M2.03	A
VII	Explain List in Python with example.	M2.03	U
	OR		
VIII	Implement programs using String 1. Convert a string to uppercase. 2. Count the occurrence of a character in a string. 3. Split a string into a list of words.	M2.02	A
IX	What is Linear Regression and name any 5 applications?	M3.02	R
	OR		
X	Outline Techniques for Data Preprocessing.	M3.04	U
XI	Compare classification and regression in ML.	M3.02	U
	OR		
XII	Summarize the KNN algorithm in ML.	M3.03	U
XIII	Explain the working of Min-Max algorithm with suitable example.	M4.02	U
	OR		
XIV	Illustrate the steps to develop a Bot to Play Last Coin Standing.	M4.04	U
