TED (21)5133C
(Revision – 2021)

2109230305A

Reg. No……
Signature…….

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER – 2025

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 *'one'* mark.

(9 x 1 = 9 Marks)

		Module Outcome	Cognitive level
1.	List the key components of AI system.	M1.01	R
2.	List any two AI programming tools.	M1.04	R
3.	Solve (i) a/b, (ii) a%b, (iii) a//b and (iv) a**b if a=3, b=4 using python.	M2.02	A
4.	…….is the output of the python code len(["hello",2, 4, 6])	M2.03	A
5.	Define dictionary in python.	M2.03	R
6.	Define Machine Learning.	M3.01	R
7.	..... is the machine learning where models learn from labeled data.	M3.02	R
8.	What is the role of search algorithms in gaming?	M4.01	R
9.	……is an algorithm used in decision-making and game theory.	M4.02	R

PART-B

II. Answer any '*eight*' questions from the following. Each question carries *'three'* marks.

(8 x 3 = 24 Marks)

		Module Outcome	Cognitive level
1.	Compare supervised, unsupervised, and reinforcement learning with the help of examples.	M1.02	U
2.	Explain any three fields of AI with examples.	M1.03	U
3.	Explain the features of python and its role in Machine Learning.	M2.01	U
4.	Explain the control statements in python.	M2.02	U
5.	Develop a python program using function to print the factorial of a number.	M2.03	A
6.	Develop a python class to enter the details of a student with attributes name, register number and marks of 3 subjects and method to find the grade.	M2.04	A
7.	Explain supervised learning and its categories with examples.	M3.02	U
8.	Explain the K-Means clustering.	M3.03	U
9.	Outline decision tree and random forest algorithms.	M3.05	U
10.	Demonstrate the process of building bots to play games.	M4.03	U

PART-C

Answer '*all*' questions from the following. Each question carries *'seven'* marks.

(6 x 7 = 42 Marks)

		Module Outcome	Cognitive level
III.	Explain Artificial Intelligence and the necessity of learning artificial intelligence.	M1.01	U
	OR		
IV.	Explain any 3 application areas of AI with example scenarios for each.	M1.04	U
V.	Explain the datatypes in python.	M2.02	U
	OR		
VI.	Explain advantages and syntax of function in python with the help of an example.	M2.03	U
VII.	Develop a python program to check whether the given string is palindrome or not.	M2.02	A
	OR		
VIII.	Develop a python program to enter 5 numbers to a list and find their sum using for loop.	M2.03	A
IX.	Explain unsupervised machine learning and its two types.	M3.02	U
	OR		
X.	Explain the steps in building a classifier in python.	M3.05	U
XI.	Develop a program in python to input an image and do the different preprocessing steps.	M3.04	A
	OR		
XII.	Explain the following: (i) Linear Regression (ii) K Nearest Neighbour.	M3.03	U
XIII.	Explain Minimax algorithm.	M4.02	U
	OR		
XIV.	Explain building a Bot to Play Tic Tac Toe.	M4.05	U

****