

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE, APRIL - 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 1 mark

(9 x 1 = 9 Marks)

		Module outcome	Cognitive level
1	Define artificial intelligence.	M1.01	U
2	Show an application of AI.	M1.04	U
3	Why Python is called as a high-level programming language?	M2.01	U
4	List two basic data types in Python.	M2.02	R
5	Define Lists in Python.	M2.03	R
6	Define machine learning.	M3.01	R
7	Tell the full form of SVM.	M3.03	R
8	Compare chat bots and live chat.	M4.03	U
9	Explain the role of search algorithms in AI.	M4.04	U

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	Summarize the learning of AI is “increasingly important” in today’s job market.	M1.01	U
2	Explain the different fields of AI	M1.03	R
3	Explain dynamic data typing in Python with examples.	M2.02	U
4	Demonstrate the repetition the execution of instructions in Python programming using loops.	M2.02	U
5	Demonstrate insertion and accessing of elements in Lists.	M2.03	A
6	Explain the object-oriented programming in Python.	M2.04	R
7	Explain classification and regression using supervised learning in machine learning with suitable examples.	M3.02	U
8	Illustrate the binarization in data preprocessing.	M3.04	U

9	Explain two common applications and advantages of deploying chatbots in customer service.	M4.04	A
10	How does AI enhance the gaming experience?	M4.05	A

PART C

Answer all questions. Each question carries seven marks

(6 x 7 = 42 Marks)

		Module outcome	Cognitive level
III	Summarize the necessity of learning artificial intelligence.	M1.04	U
	OR		
IV	Explain how AI contributes to the automation of tasks in various sectors and its impact on efficiency and productivity.	M1.04	U
V	Explain various data types in Python. Imagine you are creating a program to manage student records for a school. How would you organize data using Python data types to store student names, ages, grade, and enrolment dates?	M2.02	A
	OR		
VI	Write a Python function that generates the first n terms of the Fibonacci sequence where $n \geq 0$. Explain your code.	M2.03	A
VII	Explain how you can import a module from a Python package using an example.	M2.03	U
	OR		
VIII	Illustrate the working of 'for' loop in Python with an example.	M2.02	U
IX	Explain the SVM and what is its primary purpose in machine learning?	M3.03	U
	OR		
X	Explain scaling and normalization in data preprocessing.	M3.04	U
XI	Explain any two learning strategies in ML.	M3.02	R
	OR		
XII	Explain the K-Means clustering algorithm.	M3.03	R
XIII	Explain combinatorial Search Algorithms in AI.	M4.02	R
	OR		
XIV	Explain Minimax Search Algorithms in AI.	M4.02	R
