

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/  
COMMERCIAL PRACTICE, APRIL - 2026**

**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 | ..... is the simulation of human intelligence processes by machines, especially computer systems. | M1.01          | R               |
| 2 | Name the type of learning in which a labelled dataset is used for training.                       | M1.02          | R               |
| 3 | Write the syntax of while loop in python.   | M2.02          | R               |
| 4 | What is Dictionary in Python?   | M2.03          | R               |
| 5 | What will be the output?<br>str="Hello World"<br>print(str[-6])                                   | M2.02          | R               |
| 6 | What is k in KNN algorithm?   | M3.03          | R               |
| 7 | Define Clustering.  | M3.02          | R               |
| 8 | List any two techniques used in data preprocessing.   | M3.04          | R               |
| 9 | List any two types of search algorithm.   | 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  | List any 3 necessity in learning AI.   | M1.01          | R               |
| 2  | Write three types of learning in AI.   | M1.02          | R               |
| 3  | Implement a python program to check whether a number is palindrome or not.                                 | M2.02          | A               |
| 4  | List the features of Python programming language.  | M2.02          | U               |
| 5  | Explain basic datatypes in python.   | M2.03          | U               |
| 6  | Write python code to define a Dictionary with name and Roll no. Dictionary should contain minimum 5 names. | M2.03          | A               |
| 7  | Explain Linear Regression.   | M3.03          | U               |
| 8  | Write short note on preprocessing.   | M3.04          | R               |
| 9  | List the steps for Building a Classifier in Python.  | M3.05          | U               |
| 10 | List search algorithms used in AI.   | M4.01          | U               |

**PART C**

**Answer all questions. Each question carries seven marks**

**(6 x 7 = 42 Marks)**

|      |   | Module outcome | Cognitive level |
|------|---|----------------|-----------------|
| III  | Write about the application of AI.<br><br><b>OR</b>   | M1.04          | U               |
| IV   | Describe about the different fields of AI.  | M1.03          | R               |
| V    | Explain the conditional statements used in python with suitable syntax and examples.<br><br><b>OR</b>   | M2.02          | U               |
| VI   | Explain list and Dictionary data types in python.   | M2.03          | U               |
| VII  | Write a python program to input Reg No., Name and Marks for a subject. Calculate the grade of student as follows:<br>90 and above-S<br>80-90-A<br>70-80-B<br>60-70-C<br>50-60-D<br>40-50-E<br>Below 40-F<br><br><b>OR</b> | M2.03          | A               |
| VIII | Implement programs using String.<br>1) Convert a string to uppercase<br>2) Check whether an <b>input string is palindrome or not</b>  | M2.02          | A               |
| IX   | Explain Support Vector Machine algorithm.<br><br><b>OR</b>  | M3.03          | U               |
| X    | Compare classification and regression in ML.  | M3.02          | U               |
| XI   | Differentiate Supervised and Unsupervised learning.<br><br><b>OR</b>  | M3.02          | U               |
| XII  | Explain K means algorithm.  | M3.03          | U               |
| XIII | Explain about Combinational search algorithm.<br><br><b>OR</b>  | M4.02          | U               |
| XIV  | Illustrate the steps to develop a Bot to Play tic tac toe.  | M4.05          | U               |

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