NCCML4601

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Following Paper ID and Roll No. to be filled in your Answer Book.

PAPER ID : 43810 Roll No. 1 2 [redacted]

B. Tech Examination 2026

(Even Semester)

MACHINE LEARNING

Time : Three Hours] *[Maximum Marks : 60*

Note :– Attempt all questions.

SECTION–A

1. Attempt all parts of the following : $1 \times 8 = 8$

   (a) Define Machine Learning and explain its main objective.

   (b) Name any two types of machine learning.

   (c) What is supervised learning?

   (d) Define overfitting in machine learning.

   (e) What is clustering?

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(f) Explain principle component analysis(PCA) and state its purpose.

(g) What is the use of confusion matrix?

(h) Name any one machine learning algorithm.

SECTION – B

2. Attempt any two parts of the following : $2 \times 6 = 12$

(a) Explain mahine learning and describe its types with suitable examples.

(b) Explain the process of data preprocessing in machine learning.

(c) Explain measures of central tendency and variability with examples.

(d) Explain hypothesis testing and its importance in machine learning.

SECTION – C

Note:- Attempt all questions from this section. Attempt any two parts from each question. $8 \times 5 = 40$

3. (a) Explain machine learning and its applications.

(b) Explain supervised and unsupervised learning with examples.

(c) Explain control statements in R with examples.

4. (a) Explain Bar Chart, Pie Chart, and Histogram.

(b) Explain Mean, Median, and Mode with examples.

(c) Explain hypothesis testing and z-test.

5. (a) Explain linear regression with example.

(b) Explain decision tree algorithm.

(c) Explain support vector machine with example.

6. (a) Explain clustering and K-means algorithm.

(b) Explain hierarchical clustering.

(c) Explain principal component analysis and distance measures.

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