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Roll No. : ...300211722011

C109512(022)

B. Tech. (Fifth Semester) Examination

Nov.-Dec. 2024

CSE (AI and ML)

INTRODUCTION to MACHINE LEARNING

Time Allowed : Three hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : Attempt all questions. Part (a) from each question is compulsory and carries 4 marks. Attempt any two parts from (b), (c) and (d) of each question and each carry 8 marks.

Unit-I

1. (a) What do you understand by machine learning? How do machine learn? 4

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- (b) Differentiate between supervised & unsupervised learning with example. 8
- (c) What are the applications of machine learning? 8
- (d) Distinguish between training data & testing data. 8
4. (a)

Unit-II

2. (a) What is regression? List down types of regression. 4
- (b) Explain simple linear regression, how does it work? 8
- (c) What are the assumptions of the ordinary least squares method for linear regression. 8
- (d) Differentiate between linear regression and logistic regression. 8

Unit-III

3. (a) Explain why do we use multiple regression? 4
- (b) What are the steps to estimate ordinary least squares for multiple linear regression. 8
- (c) How to calculate coefficient of multiple determination (r^2). 8
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- (d) Comparison between linear regression and multiple regression? 8

Unit-IV

4. (a) What is classification? List out classification techniques. 4
- (b) Explain k-nearest neighbor algorithm with example. 8
- (c) Explain Naive Bayesian classifier with suitable example. 8
- (d) Write short note on :
 (i) Decision Tree
 (ii) Support Vector Machine 8

Unit-V

5. (a) What do you mean by clustering? List out some clustering methods. 4
- (b) Explain hierarchical clustering method with suitable example. 8

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(c) Explain Euclidean distance measure method with suitable example.

8

(d) Explain k-means and DBSCAN clustering with example.

8