USN ☐☐☐☐☐☐☐☐☐☐

18AI61

Sixth Semester B.E. Degree Examination, June/July 2024
Machine Learning

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1   a. Explain the concept of machine learning and why should machine learning be used. Explain with appropriate diagram. **(10 Marks)**
    b. Explain in detail about instance based versus model based learning. **(10 Marks)**

OR

2   a. Explain in detail the types of machine learning system. **(10 Marks)**
    b. Explain in detail the applications of machine learning. **(10 Marks)**

Module-2

3   a. Illustrate with suitable diagram how machine learning pipeline for real estate investment and explain in detail about select a performance measure. **(10 Marks)**
    b. Explain :
       i) Grid search
       ii) Randomized search. **(10 Marks)**

OR

4   a. How to get the data? Explain the concept in detail along with examples. **(10 Marks)**
    b. Explain in detail about select and training a model. **(10 Marks)**

Module-3

5   a. Explain learning curves with a graph along with high degree polynomial regression. **(10 Marks)**
    b. Explain and illustrate in detail about gradient discent with suitable diagrams for each. **(10 Marks)**

OR

6   a. Explain :
       i) Linear regression
       ii) The normal equation. **(10 Marks)**
    b. Explain in detail :
       i) Linear SVM classification
       ii) Non linear SVM classification. **(10 Marks)**

Module-4

7   a. Explain :
       i)   Making predictions
       ii) Estimating class probabilities
       iii) Cart trang algorithm. **(10 Marks)**
    b. Explain voting classifiers and Bagging and pasting in detail. **(10 Marks)**

OR

8 a. Explain in detail :
   i) Regression
   ii) Sensitivity to axis orientation.   (10 Marks)

   b. Explain in detail :
   i) Random forests
   ii) Boosting and adaboost.   (10 Marks)

Module-5

9 a. Derive an expression maximum livelihood hypothesis for predicting probabilities. (10 Marks)
   b. Explain Bayers theorem with MAP hypothesis.   (10 Marks)

OR

10 a. Explain Map hypothesis and consistent learners.   (10 Marks)
   b. Illustrate Naire Bayers classifier with suitable example.   (10 Marks)

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