SEMESTER EXAMINATION-2021

CLASS – CSE/VTH SEM, SUBJECT - MACHINE LEARNING-I

PAPER CODE: BCE-P517, PAPER TITLE - MACHINE LEARNING-I

Time: 3 Hour **Max. Marks: 70**

Min. Pass: 40%

Note: Question Paper is divided into two sections: **A and B.** Attempt both the sections as per given instructions.

SECTION-A (SHORT ANSWER TYPE QUESTIONS)

Instructions: Answer any FIVE questions in about 150 words each. Each question carries six marks. (5 X 6 = 30 Marks)

Question-1: Explain machine learning and its applications in brief

Question-2: Differentiate among artificial Intelligence (AI), machine learning (ML) and deep learning (DL).

Question-3: Explain different types of data, machine learning works upon in brief.

Question-4: Differentiate between batch/offline & runtime/online learning.

Question-5: Explain regression & classification problem using suitable example.

Question-6: Why we do feature selection & feature scaling in machine learning? Explain advantage of doing these during preprocessing phase.

Question-7: Describe installation process of Python & it's mostly used libraries i.e., NumPy, Pandas & Matplotlib.

Question-8: Discuss various types of machine learning algorithm in brief.

Question-9: Explain use cases where deep learning methods are better to employ than machine learning methods.

Question-10: Differentiate between overfitting and underfitting of a ML model.

SECTION-B (LONG ANSWER TYPE QUESTIONS)

Instructions: Answer any FOUR questions in detail. Each question carries 10 marks. (4 X 10 = 40 Marks)

Question-11: What do you mean by performance metrics/KPI? List different KPI used to evaluate ML model's performance during classification & regression task.

Question-12: Explain linear Regression in detail and discuss how it is different from polynomial regression.

Question-13: What do you understand by fine tuning a ML model? Discuss about Grid Search method in detail.

Question-14: Discuss concept of Ensemble learning and differentiate between Bagging & Boosting techniques in brief.

Question-15: Explain bias & variance in machine learning algorithm in detail.

Question-16: Explain reinforcement learning and compare model-free and model-based reinforcement learning.

Question-17: Explain logistic regression in detail using suitable example and

explain why it named as regression while we use it for classification purpose.

Question-18: Explain different steps involved in end-to-end machine learning model development using suitable diagram.

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