SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)
COIMBATORE – 35

DEPARTMENT OF COMPUTER SIENCE AND ENGINEERING (UG & PG)

Third Year Computer Science and Engineering, 6th Semester

2 Marks Question and Answer

Subject Code &Name: 19CST301 & INTRODUCTION TO MACHINE LEARNING

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UNIT I INTRODUCTION

1. What is machine learning?
Machine learning is a subfield of artificial intelligence, which is broadly defined as the capability of a machine to imitate intelligent human behavior. Artificial intelligence systems are used to perform complex tasks in a way that is similar to how humans solve problems.

2. Write any 3 machine learning application?

Traffic Alerts.

Social Media.

Transportation and Commuting.

Products Recommendations.

Virtual Personal Assistants.

Self Driving Cars.

Dynamic Pricing.

Google Translate.

3.what are four different types of machine learning?

Supervised Learning.

Unsupervised Learning.

Semi-Supervised Learning.

Reinforced Learning.

4.explain the process of machine learning?

Collecting Data

Preparing the Data

Choosing a Model

Training the Model

Evaluating the Model

5.what are the preliminaries of machine learning?

statistics, probability, calculus, linear algebra, and knowledge of programming.

6. What is the primary objectives of machine learning?

The purpose of machine learning is to discover patterns in your data and then make predictions based on often complex findings to answer business questions, detect and analyse trends and help solve problems.

7. What are 3 components of machine learning?

There are three main elements to every machine learning algorithm, and they include:

•   Representation: what the model looks like; how knowledge is represented.

•   Evaluation: how good models are differentiated; how programs are evaluated.

•   Optimization: the process for finding good models; how programs are generated.

8. What are the five popular algorithms of Machine Learning?

•   Decision Trees

•   Neural Networks (back propagation)

•   Probabilistic networks

•   Nearest Neighbor

•   Support vector machines

9. What is the difference between artificial learning and machine learning?

Designing and developing algorithms according to the behaviours based on empirical data are known as Machine Learning. While artificial intelligence in addition to machine learning, it also covers other aspects like knowledge representation, natural language processing, planning, robotics etc.

10. What is classifier in machine learning?

A classifier in a Machine Learning is a system that inputs a vector of discrete or continuous feature values and outputs a single discrete value, the class.

11.define the statistics of machine learning?

It helps you draw meaningful conclusions by analyzing raw data and it will covered all the critical concepts that are widely used to make sense of data.

12.define Bayesian decision theory in machine learning?

Bayesian Decision Theory is a fundamental statistical approach to the problem of pattern classification. It is considered as the ideal pattern classifier and often used as the benchmark for other algorithms because its decision rule automatically minimizes its loss function.

13. define probability theory in machine learning?

Probability theory is a mathematical framework for quantifying our uncertainty about the world. It allows us (and our software) to reason effectively in situations where being certain is impossible. Probability theory is at the foundation of many machine learning algorithms

14.how is machine learning used in real life?

voice search technology, image recognition, automated translation, self-driven cars,

15.write the uses of machine learning algorithm?

Machine learning algorithms use historical data as input to predict new output values. Recommendation engines are a common use case for machine learning. Other popular uses include fraud detection, spam filtering, malware threat detection, business process automation (BPA) and Predictive maintenance.

16. What is the main characteristic of machine learning?

One of the biggest characteristics of machine learning is its ability to automate repetitive tasks and thus, increasing productivity. A huge number of organizations are already using machine learning-powered paperwork and email automation.

17.what are the specifications of machine learning?

Specification is the task of conveying to a machine learning system what exactly its designers would like it to do. The average memory requirement is 16GB of RAM, but some applications require more memory

18.describe the testing in machine learning?

Machine Learning testing helps spot problems in models that regular evaluation metrics might miss. These problems can come from the code that enables each element of the ML system to function or from the data where outliers and an uneven distribution split, among other things, can affect the model's performance.

19. How are testing data used in machine learning?

Once your machine learning model is built (with your training data), you need unseen data to test your model. This data is called testing data, and you can use it to evaluate the performance and progress of your algorithms' training and adjust or optimize it for improved results.

20.how machine learing works with Ai?

Machine learning is an application of AI. It's the process of using mathematical models of data to help a computer learn without direct instruction. This enables a computer system to continue learning and improving on its own, based on experience.

21. what is turning data in machine learning?

Data transformation is defined as the technical process of converting data from one format, standard, or structure to another – without changing the content of the datasets – typically to prepare it for consumption by an app or a user or to improve the data quality.

22.define turning data into probabilities?

Machine Learning is an interdisciplinary field that uses statistics, probability, algorithms to learn from data and provide insights which can be used to build intelligent applications

23. How is probability used in machine learning?

Probability is the Bedrock of Machine Learning. Classification models must predict a probability of class membership. Algorithms are designed using probability (e.g. Naive Bayes). Learning algorithms will make decisions using probability (e.g. information gain).

24. What is the use of probability in decision making?

The key role of probability is to improve decision-making in the face of uncertainties. It helps decision-making objective and data-driven rather than based on instinct

25. Is probability important for ML?

Probability is a field of mathematics that quantifies uncertainty. It is undeniably a pillar of the field of machine learning, and many recommend it as a prerequisite subject to study prior to getting started.

26.how is probability theory implemented in machine learning?

Probability and Statistics are involved in different predictive algorithms that are there in Machine Learning. They help in deciding how much data is reliable, etc.

27.what are the advantages of machine learning?

Advantages of Machine learning

• Easily identifies trends and patterns. ...

• No human intervention needed (automation) ...

• Continuous Improvement. ...

• Handling multi-dimensional and multi-variety data. ...

• Wide Applications.

28.what are the disadvantages of machine learning?

Disadvantages of the Machine Learning

• Data Acquisition. The whole concept of machine learning is about identifying useful data. ...

• Time and Resources. ...

• Results Interpretations. ...

• High Error Chances. ...

• Social Changes. ...

• Elimination of Human Interface. .

29.describe any two issues faced while using machine?

Noisy data, incomplete data, inaccurate data, and unclean data lead to less accuracy in classification and low-quality results.

30.describe the future scope of machine learning?

The scope of Machine Learning is not limited to the investment sector. Rather, it is expanding across all fields such as banking and finance, information technology, media & entertainment, gaming, and the automotive industry.