

1. Define artificial intelligence and provide examples of its applications?

Ans: The theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.

Examples :

Facial detection and recognition

Chatbots

Self driving cars

2. Differentiate between supervised and unsupervised learning techniques in ML?

Ans:

Supervised learning	
Less Computational Complexity	More Computational Complex
Uses off-line analysis	Uses Real-Time Analysis of Data
The number of Classes is known	The number of Classes is not known
Accurate and Reliable Results	Moderate Accurate and Reliable Results
The desired output is given.	The desired, output is not given.

3.what is python?discuss its main features and advantages.

Ans:Python is a programming language that is interpreted and considered to be high level too.

Features:

Easy to read and understand

Interpreted language

Free and open source

Dynamically typed

Flexible

Advantages:

Easy to learn

Open-source

Interpreted language

4.what are the advantages of using python as a programming language for AI and ML?

Ans: Python is the major code language for AI and ML .It surpasses java in popularity and has many advantages, such as a great library ecosystem ,good visualization options ,a low entry barrier, flexibility ,readability.

5.discuss the importance of indentation in python code?

Ans: The purpose of indentation in python is to define the scope of statements such as those within loops, conditionals, functions ,and classes. indentation is crucial for the interpreter to understand the logical structure of the code.

6.define a variable in python. provide examples of valid variable names

Ans:A variable is a symbolic name that represents a value stored in memory. Valid variable names can consist of letters , numbers, and underscores but must start with a letter or underscore.

Examples:

a=7

c=8.5

7.explain the difference between a keyword and an identifier in python

A keyword refers to a predefined word that python reserves for working programs that have a specific meaning, You can't use a keyword anywhere else. Python Identifiers are the different values that a programmer can use to define various variables, integers, functions, and classes.

8.list the basic datatypes available in python.

Ans:numeric(integer,float,complex)

Sequence type(strings, list, tuple)

Boolean

Set , dictionary .

9.describe the syntax for an if statement in python.

```
if (condition):
```

```
    statement
```

example:

```
a=6
```

```
if (a%2==0):
```

```
    print("even number")
```

10.explain the purpose of elif statement in python.

Ans:

It is used to test multiple conditions .it is written following of an if statement in python to check an alternative condition if the first condition is false. The code block under the elif statement will be executed only if its condition is true.