Assessment

1) Define Artificial Intelligence (AI) and Provide examples of its application.

Artificial Intelligence is a branch of computer science that deals with creating intelligent machines that can think and work like humans.

Applications of AI with examples:-

* Healthcare :- AI is widely used in the field of healthcare and medicine.
* Social media :- Some social media platform such as Facebook, Instagram, etc uses Artificial Intelligence to show relevant content to user.
* Agriculture :- In agriculture, AI has helped farmers identify areas that need irrigation, fertilization, Pesticide treatments or increasing yield.

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

Supervised Learning	Unsupervised Learning
1) Algorithms are trained using labeled data.	1) Algorithms are used against data is not labeled.
2) It is highly accurate.	2) It is less accurate.

3) Uses offline analysis.	3) Uses real-time analysis of data.
4) Desired output is given.	4) Desired output is not given.

3) What is Python? Discuss its main features and advantages.

Python is an interpreted, interactive, object-oriented programming language.

Features:-

→ Easy to code
→ Open-source
→ Portable
→ Extensible.

Advantages:-

→ Reduces maintenance cost.
→ Avoid the Harm of software Bugs.
→ easy memory management.
→ Integration with other languages.

4) What are the advantages of using Python as a Programming language for AI and ML?

Python is the major code language for AI and ML.

Advantages:-

1) A Great library ecosystem
2) Good visualization options.
3) community support
4) Flexibility
5) And platform independence.

5) Discuss the importance of indentation in Python code.

→ The Primary Purpose of indentation in Python is to define the scope of statements, such as those within loops, conditionals, functions and classes.

```
a = 10
if a<0:
    Print("negative number")
else if a==0:
    Print("zero")
else:
    Print("positive number")
```

6) Define a variable in Python. Provide examples of valid variable names.

A Python variable is a reserved memory location to store values.

Ex) a = 10

name = "Nisha"

A = 22.

7) Explain the difference between a keyword and an identifier in Python.

Keyword	Identifier.
1) keywords are reserved words with a special meaning.	1) Identifiers are user-defined names of variables & functions.
2) They are written in lower case.	2) Need not be written in lowercase.
3) contains only letters.	3) contains letters, underscore and digits.

8) List the basic data types available in Python.

1) Numeric
   - Integer
   - float
   - complex

iii) Sequence
- string
- tuple
- List

iv) mapping
- dictionary

v) boolean

vi) sets.

a) Describe the syntax for an if statement in Python.

The if statement allows you to execute a block of code if a certain condition is true.

```
a = 10
if a == 10:
    Print("a is equal to 10")
```

b) Explain the Purpose of the elif statement in Python.

The elif statement allows you to check multiple expressions for True and execute a block of code as soon as one of the conditions evaluates to True.

Ex:-

```
age = 18
if (age < 18):
    Print ('Age is less than 18')
elif (age == 18):
    Print ('Age is equal to 18')
else:
    Print ('Age is greater than 18').
```